

decisive moments
in becoming human

objectification
narration &
living through a storyline

a study in cognitive archaeology and philosophical anthropology

John F.R. Gilbert

the focus is on action in plain sight

where life happens

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This work is dedicated to the Emeritus Professor Thomas Wynn, who was the first to recognize the merit of the objectification hypothesis, and, to Lut Maes, whose enthusiastic support created the indispensable conditions for this project's completion.

"The important issue is Gilbert's nuanced and subtle discussion of object concept itself. I believe that he has, in fact, identified an important, missing piece in the puzzle of hominin cognitive evolution. (...)

In sum, *The Forgotten Transition* is a well-reasoned, archaeologically informed argument for a hitherto underappreciated development in hominin cognition. I recommend it highly for anyone with a serious interest in evolutionary cognitive archaeology."

Excerpt from a review by prof. T. Wynn on the introduction of the objectification hypothesis in the 2018 publication

Schematic layout

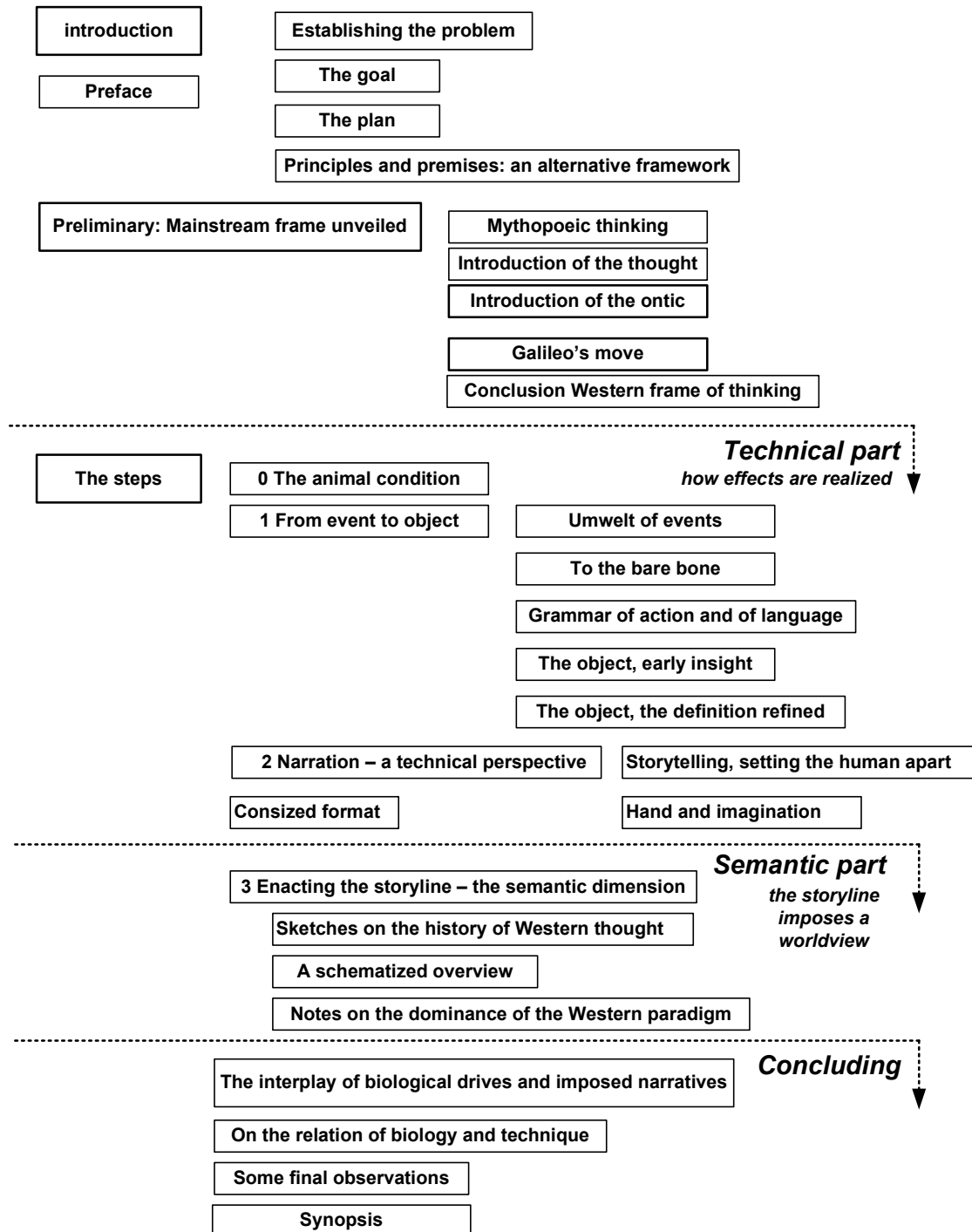


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Preface

Answering a rather playful discussion I took up the challenge to compose conditions of possibility – Kantian style – on the subject of the human condition. While working on this it dawned that I actually was summarizing cardinal insights acquired over a long term project. The job done I considered to repeat the exercise but this time not as rash. It should be economic and to the point. The present contribution is at the same time new and not new. I have drawn from existing texts, partly rewritten, where appropriate extended with nuances and more recent findings. Some views are reinterpretations from a different vantage point. It reflects my view on the human condition as the result of more than fifty years of research.

introduction

Establishing the problem

What is it like to be human? This question, echoing Thomas Nagel's famous inquiry into the bat, carries a tacit presupposition: that for the human, there is "something which it is like" to be. It assumes a subjective experience of one's own being. My contention begins with a challenge to the premise's universality. Against Nagel, I argue that for an animal like a bat, there is no such condition as "what it is like" to be one.¹ The animal does not stand in a relation of experience "to" its being; its being and its world collapse into a single, non-reflective dynamic. From our human perspective, we may describe them as "fully being," this is a being without interior distance, a being that does not appear "to itself".²

For the human, however, the formula holds: "it is something like to be." The pivotal term here is "it." This "it" refers to appearance itself—the guise under which the world, or whatever there is, looms into presence. The "it" is the phenomenon that appears. For the religious believer, this appearing may take the form of a representation of Jesus; for the neurologist, an image of neuronal connections; for the huntsman, the figure of a wild boar. Regardless of the specific content, the fundamental structure is that of something coming forth as appearance. This recalls the Greek concept of *aletheia* (ἀλήθεια)—truth as that which is wrested from

¹ This condition attributed to a bat is a projection of the human kind of condition on that of a bat, which does not possess such condition at all. It therefore is an anthropomorphism.

² In terms of Plessner and Von Uexküll animals are bound to immediacy collapsing with the lived body.

concealment, that which appears.^{3/4} Thus, while the animal is its world, for the human—who is in the first instance also an animal—the world appears, or more fundamentally, is brought into appearance.

This presents us with a profound philosophical and evolutionary puzzle. If humans are, as Darwin established, one species among others, arising from the same tangled bush of life, then in principle, our fundamental experience of being should be contiguous with that of other animals. How, then, did a species not different in kind come to realize a condition in which the world shows itself “as” an appearance? How did the “it” of phenomenality emerge from within a being that was once purely immersed in its environment?

In short, the core question of the human condition is this: How are we to understand the genesis of the phenomenal world—the world as it appears — within a naturalistic framework that insists on our fundamental continuity with all life? The human proves to be uniquely different in this decisive way. The task, therefore, is to explain how a species, akin to others in its biological principle, could have become the site where being clears an opening for appearance.

The goal

After many years studying various aspects of the human condition, I have arrived at what I believe to be a plausible and coherent overall suggestion. While the resulting insights have been published in numerous individual contributions, the time has come to present them in a single, summarizing volume that depicts the central argument as clearly as possible.

The plan

I will not adhere to the commonly accepted frames of reference. Instead, I will begin by listing the foundational principles and premises that sketch an alternative framework. The body of this explanation will consist of four sequential parts.

First, humans are, in origin, animals. As such, we share basic features with at least our most akin species. It is my firm view that one cannot fully grasp what is

³ Husserl is right in stating that “Gegenstände sind für mich was sie sind wie gegenstände im Bewusstseins...” Primordially and exclusively there – as phenomena in consciousness.

⁴ Alethea not only expresses that something appears, it at the same time states that something *is* (ontic) (Kahn C.H. 1973. *The verb ‘BE’ in ancient Greek*. Hackett Publishing)

exclusively human without first establishing a well-understood baseline of what is shared.

With this baseline established, the focus will shift to the profound reorganization of the visual and motor fields that followed from the evolution of bipedalism. This posture fundamentally re-channeled our contact with the Umwelt through the form and abilities of the hands, making them the primary interface with the world.

Taking this as a further steppingstone, the third part will discuss the origin of self-induced imagination—that is, the capacity for displacement in experience. I will argue that it is this very capacity that enables narration.

These three steps sketch the essential technical development of the human condition. But narration is not an idle byproduct; it is an active, world-shaping force. It instantiates a particular interpretation—a storyline, a version, or a discourse—that in turn drives behavior. In the fourth and final part of this explanation, I will discuss the specific version that has come to characterize the Western way of thinking.

Principles and premises: an alternative framework

No narrative—whether fiction or nonfiction—is composed from a blank slate. Every account tacitly expresses the beliefs of its author. The present work is no exception. Below, I outline its most fundamental principles and premises.

1. The first basic perspective: Darwinian continuity

Darwin's sketch of the tree of descent establishes a common origin for all species. As inhabitants of the same branch, humans belong unequivocally to the family of great apes. This fact is foundational and cannot be overlooked.

The drive to survive, expressed through the negotiation of environmental fluctuations, is similar for all living organisms. Fundamental strategies—appropriating what is useful, avoiding harm, and the urge to procreate—are universal. An often-overlooked corollary of this tight kinship, particularly with the great apes, is that early modes of cognition must also have been similar. Darwin himself observed in *The Descent of Man* that the basic mental intuitions were likely the same.⁵ This provides a perspective on early human cognition that, while not always easily accessible, is grounded in biology rather than mystery. The primary conclusion is that the fundamental cognitive condition of early humans and their closest animal kin must have been common.

⁵ Also in *The Expression of Emotion in Man and Animals*.

2. The Second Basic Perspective: Kantian Embodiment

A second fundamental insight is borrowed from Kant: the way the world is perceived is organized by the structure of the mind. In contemporary terms, we can productively exchange the notion of "mind" for that of "embodiment." It follows that the body—its senses and capacities—is the selective and filtering instrument that brings the environment to life as a phenomenon. Furthermore, any such instrument constitutes a closed processing system; its structure determines what can be perceived and processed.

Synthesis: The Embodied Animal as a Starting Point

When these two insights are joined, a decisive premise emerges: human perception of the world is definitively shaped by our condition as embodied animals, a condition we share with all other species. This is not merely the most plausible depiction of the initial human condition; it is difficult to conceive how it could be refuted.

This synthesized perspective forms the indispensable breeding ground from which all understanding must arise. It yields the following core observations:

a. Perception Guides Behaviour.

The way an organism perceives its Umwelt fundamentally determines how it will behave. This principle already points toward an answer to a problem tacitly residing in the background: the need to understand human behavior not solely on the level of individual psychology, but on that of general anthropology. To this end, the principle suggests we must first gauge "how the human as a species perceives its Umwelt". We are not entirely ignorant in this pursuit, as the next principle will demonstrate.

b. Embodiment Opens and Constrains.

The specificities of a species' embodiment simultaneously open its possible abilities and define the limitations of how it negotiates its Umwelt. In the human case, the erect posture consequent to bipedalism and the unique abilities afforded by the grasping, prehensile hands are the defining characteristics of our perceptual and behavioral approach.

c. Motor Logic Shapes Visual Salience.

Following from this, the system or "logic" of an organism's motor abilities determines the form and character of the shapes that gain salience in its visual field. For humans, this is the stage where a particular form of salience takes shape:

what in time will become called objects gain delineation precisely because they answer to and complement the functional characteristics of the grasping hands.

Conclusion of the Framework

Consequently, the focus of this approach will be on the abilities opened by the human phenotype and on what the world offers in complementary response—its affordances. Deviating from mainstream thought, the primary locus of explanation will not be the workings of "corpuscles" deep within the cranial vault. This is to anticipate what will be fully explained under "Step 1," but it follows logically from the premises established above.

3. The public character of sources

As established, the analytical focus here will be directed toward observable behaviour, deliberately rejecting explanations that invoke invisible sources or mysterious interventions. This is not to deny the critical role of genetic mutations, for it would be misguided to ignore their evolutionary impact. In this methodological framework, however, such factors are bracketed. The aim is to determine how far one can proceed in constructing a coherent explanation by emphasizing what is publicly observable and readily at hand.

4. The role of the brain

The mainstream view attributes a dominant, almost causative importance to the workings of the brain. It is often treated as a kind of Aladdin's lamp, from which various, seemingly magical cognitive competencies emerge. This view, as will be explained, has a specific historical provenance. In the present account, the brain is considered differently: as a functional node and processor that supports and enables behaviour within the public arena. It is a necessary organ of mediation, not the solitary origin of mind.⁶

5. The shared initial condition

If the human is, in principle, an animal among animals, a coherent view of our shared initial condition is necessary. This may seem at first glance an impossible task, but we are not as helpless as is often assumed. The following sources provide accessible evidence:

- Studies in ethology.
- Research and reports in the field of developmental psychology.
- Efforts in robotics and artificial intelligence.

⁶ This has been discussed in *The 5th Ape*, sub *The status of the brain*.

- The observation that animal heuristics and intelligence demonstrably transcend the capabilities of a simple automaton.
- The methodological exercise of abstracting away abilities considered strictly and uniquely human.

Through the synthesis of such sources, a profile of the shared initial condition can be constructed. (To date, forty-seven distinctive features characteristic of this baseline have been catalogued.)

6. Cognition as a characteristic of public performance

By focusing on public performance, attention shifts to the embodied character of cognition. The body is the manifest key that locks into the environment; the environment, in turn, is the source of relevant clues, filtered through the organism's primary motivations and relevant past experiences. This aligns with the approach of enaction and, the view that there is no radical rupture between organism and environment but rather that both constitute a single interactive unity. It is necessary here to invoke the framework of the 4 E's of cognition: embodied, extended, embedded, and enactive.

This stands in direct contrast to the mainstream view, which treats cognition as a product of the brain—a computer, or at least a computer-like control centre—that processes information internally before issuing commands to guide behaviour.

7. Operationalism (a)

Reinforcing the commitment to behaviour in the public arena, explanations in this work will take the form of describing procedures and operations. This stands in direct opposition to the mainstream approach, which tends to interpret behavioural correlations as evidence of hidden neural sources from which uniquely human abilities are said to emerge.

8. Operationalism (b)

Consequently, the inquiry will not seek to gauge the nature or essence of any given phenomenon (e.g., "What is consciousness?"). Instead, it will focus on the concrete operations that enable the condition in which that phenomenon occurs (e.g., "Through what operations does a state of reflective awareness become possible?").

9. The primacy of Gestalt Psychology

In the first instance, behaviour is most productively understood through the dynamics of Gestalt psychology. This is because Gestalt principles connect directly to 'how' fluctuations in the Umwelt are perceived—and as established, how the world is perceived determines how an organism behaves. This framework provides the most immediate model for the link between environmental salience and behavioural response.

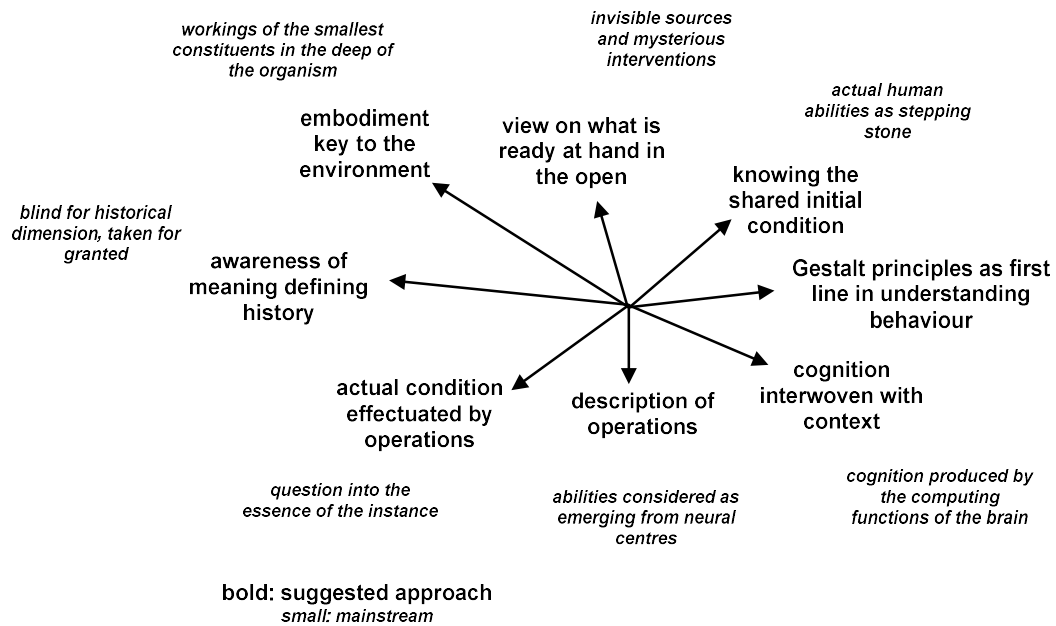
10. Awareness of the historical context of meaning

Ultimately, any explanation constitutes a particular version or interpretation of events. This is an unavoidable epistemological fact. Interpretations can be ordered on a continuum: at one end are descriptions restricted to the summation of observable operations; at the other are meaningful depictions imbued with regional and historical provenance.

Since the aim here is to describe the operations that produce particular effects, it is essential to possess a critical awareness of the historical narratives that have previously clothed—and often concealed—those very operations. Such awareness helps to unveil the operations by identifying and subtracting historical bias. The following are illustrative examples of historically conditioned assumptions that can obscure operational analysis:

- The belief in an essential character or nature (the "question of essence").
- The mind-body duality.
- The notion of a *tabula rasa*, a secular mind that may function defectively (Locke).
- The idea of an ultimate, correspondent truth accessible to a detached observer (germinated with Plato).
- The "Galilean" redefinition of the object, which displaced the Aristotelian version.
- The conceptualization of the brain as the central command centre of the organism (Willis).
- The reductionist focus on matter and the interaction of particles as the hidden, essential causes of behaviour (Mersenne, Hobbes), focusing on constituents deep within the organism (Galileo in *The Assayer*).

Facts such as these should sharpen the veiling analytical view, allowing one to unmask historical biases that are often taken for granted.



While not exhaustive, the principles outlined above provide the necessary background framework for understanding the alternative view to be developed in this work.

However, because mainstream thinking is often tacitly accepted as the natural order of things, we must first delve deeper into the historical circumstances that gave rise to its core interpretations. To fully appreciate the nature of an innovation, one must understand the ground it overturned.

Therefore, we will begin by shedding light on the mythopoeic condition that preceded the formation of the characteristic Western framework. The central idea is that the innovative introductions which came to define Western thought—its unique ontological and epistemological commitments—can be understood most clearly precisely in contrast to this antecedent condition.

Preliminary

The mainstream frame of reference unveiled

Mythopeic thinking

An intuitive stepping stone for understanding pre-rational thought is to observe the lifeworld of young children who have already acquired language to a sufficient degree. Between the ages of two and four, the world and language exist in a state of magical collapse. The teddy bear named Joe is a real-life companion; the chair was "mean" for causing a hurt. From ages four to seven, this mode persists but becomes interwoven with nascent distinctions between inanimate objects and living organisms.

This sketch offers an impression of linguistic formulation not as a detached system of reference, but as a primary mode of behaving within given circumstances—a way of being, pure and simple. The contemporary, standard depiction of language as a dedicated instrument for transferring information is a much later interpretation, foreign to this foundational experience. In its origin, the linguistic expression is literally an act of instantiating; it is the performance of being-meaning. I propose to term this an "articulation of existence," a mode of presence not essentially different from any other embodied action.

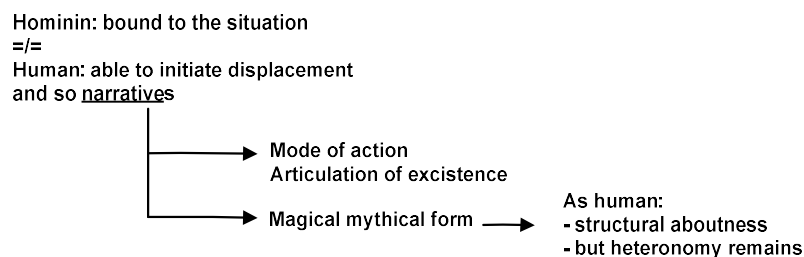
In its narrative function, this articulation could take myriad forms: the epic account of heroic achievements (Darius), history in a more general sense (Herodotus), the report of foundational events (Homer on Troy), legal codices (Hammurabi), divine revelations (the Bible, Vedas), as well as practical records of transactions and inventories.

Crucially, this meaning-giving dimension bore a magical and mythological character. The heteronomous determination that characterized the hominin—the animal condition of being governed by external and internal stimuli—persisted. However, its guise was replaced. External pressures like the presence of a predator or internal drives like hunger were supplanted by a new form of heteronomy: a self-initiated process of attribution that was then projected onto external elements.⁷

At this juncture, a vital observation must be made.

⁷ At this point Feuerbach comes to mind.

Recall that for the hominin, experience collapsed with the Umwelt into a single, holistic staging—a unified dynamic field. The human condition is different. While the human experience of existence is characterized by a structural relation of aboutness (the phenomenal "it"), the semantic content of this relation initially involved projecting causal agency onto external factors (e.g., the forces of natural elements).⁸ Thus, the heteronomous attribution of meaning was preserved, but the structure of the relation was transformed. Humans came to appreciate things and events from a distance, even as they populated that distance with projected powers.⁹



To further elucidate the pre-rational or mythopoeic condition, several of its most important features are listed below. To provide additional support and facilitate an empathic understanding, each is contrasted with its counterpart in the contemporary, accepted worldview. This is a somewhat artificial intervention, as it anticipates explanations yet to be fully developed. However, it is essential for establishing a clear grasp of the mythopoetic stance from which the subsequent Western innovations departed.

The Mythopoeic Condition

Experience is holistic: a scene of turbulent, dramatic forces, wills, and personified gods in a cosmic staging. The human is immersed in, lives through, and actively participates in this drama. This implies a condition of total immersion, with **no subject-object split**.

Time is cyclic, following a divine rhythm of decay and rebirth. The human supports this cosmic cycle through the correct execution of rituals.

The Contemporary Framework ("Con")

The world shows itself as an objective reality "over there," guided by ordering principles that are not immediately apparent but can, through rational effort, be understood. There exists a **clear subject-object dichotomy** between the observer and the observed.

Time is a secular, linear, and measurable frame of reference. This enables long-term planning (e.g., in agriculture), which becomes a fundamental structural

⁸ The introduction of "aboutness" will become explained later in the context of the coming into being of the concept of "object".

⁹ This will be contrasted to semantic aboutness later.

The Mythopoeic Condition

Language, as the vehicle of meaning, is expressive and participative. It is an act that engages with and sustains communal and cosmic life. The practice is primarily oral, utilizing rhyme, rhythm, and prosody as mnemonic and performative aids.

Dreams and omens are ontologically significant; they are meaningful communications from the deeper layers of reality and are taken seriously.

Authoritative knowledge is traditional and revelatory. It is rooted in the wisdom of predecessors, handed down and preserved through sacred tradition.

The **lived interpretation** of the world is a mode of direct action, oriented toward the practical mastery and navigation of life.

The fundamental **experience of partaking in life** bears an overall character of **enchantment**—the world is luminous, agential, and meaningful.

Two final remarks

1. On the persistence and coexistence of worldviews

While a clear historical transition is evident, it was never a complete takeover. Some cultures did not undergo this shift and have remained predominantly within a mythopoeic mode. Even in the West, the two strands have long existed in parallel—revelatory faith on one hand, scientific practice on the other. Moreover, the division is not absolute within a single individual. It is entirely possible for a person to maintain a rational, analytic stance in a professional domain while upholding mythopoeic or religious views in other spheres of life.

The boundary is often thin. In daily life, most people intermittently speak to objects or machines as if they were animated agents, revealing the persistent, underlying

The Contemporary Framework ("Con")

determinant of society.

The alphabet and the technology of writing allow thought to be materialized into an observable object. This externalization facilitates complex, cumulative reasoning and enables the critical analysis of ideas across time and space.

Dreams and omens are relegated to the subjective realm of fantasy, psychology, or superstition, bearing no direct authority on external truth.

Knowledge is grounded in empirical observation and experiment. It is recorded on material carriers (texts, data), making it independently verifiable and available for scrutiny across generations.

The conditions of life can become an object of detached, **theoretical contemplation**, separate from immediate practice.

Life and the world are subjects that can be considered **objectively**; they are potentially disenchanted systems open to neutral analysis.

grammar of the participatory stance. This illustrates that the mythopoeic mode is not an extinct stage but a permanent stratum of human sense-making, capable of resurfacing even within a rationalized culture.

2. On the relation to dual-process theory

The mythopoeic stance can, to a significant degree, be understood as a verbalized and culturally elaborated expression of what Kahneman and Tversky termed System 1 cognition. This analogy is heuristically valuable, as it connects ancient modes of thought to contemporary cognitive science.

However, a crucial caveat is required. System 1, with its fast, associative, and heuristic operations, expresses a deep biological underpinning. System 2, characterized by slow, analytic, and rule-based reasoning, is more evidently a cultural construct. The danger in conflating them is that System 2 may be granted a false sense of natural, biological solidity, when in fact it is profoundly dependent on specific, volatile historical circumstances—such as the invention of alphabetic writing or formal logic. While complementary in function, the two "systems" are ontologically quite different in their makeup: one is a biological endowment, the other a historical achievement.

The mythopoeic condition as foundation

The mythopoeic condition is not merely the superseded starting point for later development; it is the enduring fundament upon which all subsequent understanding is built. Its logic of participation and enchantment remains the substrate from which more abstract and objective forms of thought must distinguish themselves.

Given the exceptional fascination of this subject, the following works are highly recommended for further study:

- Nisbett, R.E. (2003). *The Geography of Thought: How Asians and Westerners Think Differently... and Why*. The Free Press.

Makes the vital case that the Western way of thinking is not a universal default, but one particular cultural development.

- Lloyd, G.E.R. (1979). *Magic, Reason and Experience: Studies in the Origin and Development of Greek Science*. Cambridge University Press.

- Barnes, J. (Ed.). (1987/2001). Early Greek Philosophy. Penguin Books.
A comprehensive compilation of Presocratic fragments with commentary.
- Hussey, E. (1972/2010). The Presocratics. Bristol Classical Press.
- Frankfort, H., Frankfort, H.A., Wilson, J.A., & Jacobsen, T. (1946). The Intellectual Adventure of Ancient Man: An Essay on Speculative Thought in the Ancient Near East. The University of Chicago Press.

A methodological pivot: returning to the genesis

In the effort to elucidate the mythopoeic condition, we have, in a sense, run ahead by contrasting it with the contemporary worldview. We must therefore take a deliberate step back to the position of mythopoeic thinking itself and set aside our commentary on the later situation. The aim is to begin from within this foundational stance and trace, step by step, the construction of the interpretive framework that would eventually become dominant in the West.

Our analysis will focus on three pivotal, generative innovations:

1. The emergence of thought as an object: The coming into being of the awareness that there is something like a thought—the moment cognition turns upon itself, making its own operations an object of consideration.
2. The introduction of the invariable: The conceptual discovery of constants beneath surface variation, which introduces the ontic realm of stable being as distinct from mere appearance.
3. The Galilean reconfiguration: The contributions of Galileo, who completed this movement by rigorously redefining the object of scientific inquiry, effectively mathematicizing nature.

This sequence is not offered as an exhaustive history of Western thought. Rather, it is a schematic delineation of its deep philosophical architecture. It will suffice to make clear that this framework constitutes a specific, constructed narrative about the world—not a neutral mirror of nature, but a particular and potent way of making nature appear.

Introduction of the thought

The Basic Condition: The Pre-Reflective World

The first crucial step toward the eventual concept of "mind" was the introduction of a far more basic idea: that there was such a thing as "a thought." To the contemporary Western intellect, it may seem astonishing that there was ever a time when the fact of having thoughts was not itself a subject of consideration. Yet this was indeed the case. No surviving tablets or early texts testify to an awareness of an inner realm of "thoughts," nor to an entity like a "mind" that houses them. These conceptual categories emerged later. This is a foundational insight: the division of the world into the material and the mental is not a self-evident truth, but a historical invention.

Consider an analogy: we are bipedal. We stand and walk. In normal circumstances, we are engaged in these actions without consciously considering that we are standing up. Who actively realizes their own breathing? It is accomplished pre-reflectively. So it was with thinking. Initially, there was not even a word for "a thought." This is not about the content of a thought (thinking about something), but about the primary awareness of thinking as such—becoming conscious that one *has* something called thoughts.

As supported by the analysis in "A Brief History of the Concept of Mind in Western Culture":

"As Richard Parry in his contribution on *Episteme and Techne* in the Stanford Encyclopedia of Philosophy explains, there has been a time in which both terms referred to the same kind of action i.e. intervening in order to make, cure or repair something malfunctioning. That is taken to be the initial condition. The following step is taken by the medic explaining the sick or injured what he is going to do in order to provoke cooperation. Cutting corners overtime that explanation related to the factual intervention gained the status of a quality in its own right. As such *techne* referred to the factual intervention, while *theoria* referred to the explanatory dimension. At this point manifest manipulation starts to become divorced from some ethereal quality, we now consider to be a thought. Of importance here is not only the distinction as a novelty, but **the coming into being of thinking as a kind of ethereal quality**. One should recall that in the previous period no such distinction occurred; acting and thinking collapsed into one global way of

being, one kind of action. From this moment on however, not only thinking became divorced from effective acting, the quality of both differed. Action was observable and tangible, thinking – having a thought hence the existence of a thought involved some ethereal dimension. That is one thing to keep in mind.”

It is essential to understand that this was not the discovery of a pre-existing, latent capability. Becoming conscious of "a thought"—where the emphasis is on that very *becoming conscious* and not on the cognitive activity itself—was the introduction of an ontological novelty.¹⁰ Prior to this innovation, the possibility that there was "something like a thought" was not a subject of consideration. This reveals the core claim: the idea of "a thought" is itself a conceptual construct. This is a prime example of an innovation that precipitates a major shift in anthropological self-definition. It is not a change in the mode defined by our capabilities, but in the framework through which we understand them: the human begins to consider himself as a creature that has thoughts. This is an important nuance with profound consequences. The fundamental experience of being shifted. The human was no longer solely a dynamic, monistic entity—a holistic part integrated into a larger, turbulent whole. A new appreciation emerged: there was a material side to being (the soma) now distinct from a more ethereal condition (the nous). At this juncture, the dualist scheme that we now take for granted began to seep into consciousness, gradually replacing the holistic pandemonium of personified forces.

The introduction of "a thought" as a novel category within consciousness can be difficult to grasp, as it retroactively colors all our introspection. A somewhat analogous development—the shift from concrete to abstract forms of value—occurred with the invention of money.¹¹ To further clarify this conceptual revolution, an illustrative analysis has been appended.

¹⁰ Of course people performed an act which later would become coined “thinking” in the same sense as there was an activity which now is called digestion or hormonal secretion. But it was not yet demarcated into a template i.e. concept thought, digestion or hormones.

¹¹ For the role of money in introducing abstraction, see *The history of mind in Western Culture*. Also Zoroastrianism important in that respect

Introduction of the invariable - the ontic

The previous can be seen as an introductory move into a larger development. A further step was taken with the introduction of the invariable and all of its effects. Again I will use an extract from the contribution mentioned earlier.

“Geoffrey Lloyd (1991) offers the following explanation.¹² The overseas trade made the Greeks quite wealthy.¹³ It enabled them to provide the youth with a good scholarly education, the art of debating as an important discipline. That practice implies the balancing of one argument against another; in short they got confronted with the problem of subjectivity. It brought the need for an objective benchmark as criterion to evaluate to life. Observe that – ironically – the need for what in the end would become called objectivity sprouts from a set of subjective opinions as breeding ground. In other words the highly valued objectivity is actually built on an instable surface of subjectivity. Back to the subject, nature seemed to offer stability or invariability. So the idea of nature as the whole of what is out there got provided with a new meaning, nature as the prime example of that what is stable, in short invariable. This particular meaning can be recognized in the question into the nature of a person. One wants to know the characteristics which define a person through time, these which are invariable (and without which the person would not be who he is).”¹⁴

This innovation opened the quest for what could be considered invariable—that which is stable, eternal, and essential. In short, it initiated the search for the essence of what is, captured in the famous Greek question, *ti esti* ("what is it?").

A flood of suggestions followed—water, air, earth, even the void. But the specific candidates are not the point here. The revolutionary act was the application of a new analytical template to reality.

Consider an apple. Is its colour, volume, or taste the essence of "apple-ness"? No. Change these attributes, and an apple remains. These features are secondary qualities or accidents. The essence is something else, something that persists beneath such variations.

This reveals the profound intellectual operation: a template is imposed upon phenomena, dividing any given something into a stable essence and a set of variable aspects or attributes. It is as if a transparent analytical grid is spread over nature, enabling a form of intervention whose consequences would later be debated as either fortunate or deeply problematic.

¹² G.E.R. Lloyd 1991, *Methods and Problems in Greek Science*. Cambridge University Press

¹³ “Greeks” is a shorthand referring to the seafaring and trading peoples around the Aegean sea.

¹⁴ It is absolutely worth reading the original text.

This very ability—to discriminate between essence and accidents—enabled new forms of engagement with the world: different approaches, different descriptions, and different procedural steps. In short, it made discursive, analytic thinking possible. Cutting corners, this conceptual move ultimately resulted in the scientific method, and it would be foolish not to recognize this as a monumental advantage. However, this move has a seamy side, which is vitally important in the context of our present discussion.

The aspects, once distinguished, begin to be treated as substantive entities in their own right. The colour of an apple is no longer grasped as an instrumental abstraction—a useful isolation of a property for in-depth study and manipulation. Instead, it becomes reified as a dimension that exists independently. It is treated almost as a natural kind; "colour" is taken to be something that exists in nature, apart from any colored object. So far, this problem is not especially serious. No chemist would consider "colour" itself a fundamental component of matter. The practical utility of the abstraction outweighs its philosophical slippage.

The situation changes catastrophically, however, with the matter–experience configuration (often framed as the matter–qualia or mind–body problem). In this context, it makes little difference whether one takes the explanatory ground to be neural tissue (the brain) or a set of cognitive operations; in both cases, an explanatory gap seems to yawn open in relation to the content of the "ethereal" realm—be it a thought, a sensation, or reflective consciousness.

The critical question thus becomes: Is this a real ontological problem, meaning do two fundamentally different kinds of substance truly exist? Or does the problem arise from a particular way of conceptualizing the world?

This same question underlies the so-called self-reference paradox: How can what is essentially one unified phenomenon act as if it were spliced into two?¹⁵ Observe that the paradox only emerges once things have been conceptually pulled apart.

Let's recall what has been explained earlier. In the pre-rational period (Mesopotamia, Uruk, Ur...) the experience was mythopoeic i.e. holistic. There was no separation between the supernatural and the natural, all was animated, natural phenomena were personalized gods or spirits, all was explained by narratives (not by mechanistic cause-

¹⁵ Eubulides of Miletus, 4th century BCE.

effect chains) etc.¹⁶ Within that life-world, experience was undivided. The division was introduced into experience through a series of conceptual innovations: first the idea of “a thought,” then the identification of that concept with a separate reality. From that point forward, body and mind, matter and experience, ceased to be seen as useful concepts and were mistaken for real, distinct ontological instances.

Conclusion: Problems like the explanatory gap and the mystery of how matter gives rise to experience are not discoveries about the fundamental nature of reality. They are artifacts of a specific conceptual framework. They are the inevitable, perplexing shadows cast by the particular analytic grid—the division into essence and aspects, matter and mind—that Western thought has laid over the world.

In my view, on the level of being, there is no distinction between the body and the experience of an energetic flow. The split is introduced by the act of labeling with different names. The two are one, in the same sense that the air bubbles appearing in boiling water are part of a single, unified event.

It is appropriate—even necessary—for a laboratory technician to make distinctions in an experimental report. Such a distinction is instrumental, serving a specific analytical goal. But as a phenomenon within a lived world, there is only one “event.” Consider a person who accidentally touches a boiling kettle: they feel a sharp pang, jerk their hand away, and utter a curse. A physiologist can describe the neural and muscular response, a psychologist the emotional reaction, and a linguist the syntactic form of the exclamation. Each perspective isolates an aspect for study.

For the person undergoing the experience, however, it is one condensed moment: a fusion of sensory awareness (pain), embodied reaction (the jerk), emotional surge (anger, shock), and conscious articulation (the curse). The analytical distinctions of the observer are not present in the lived reality; they are tools applied after the fact to a primordial unity.

¹⁶ Mythopoetic is actually a term introduced by the couple Frankfort in their 1946 book *“The intellectual adventure of ancient man”*. It refers to understanding the world through myth, focussing on direct experience rather than discursive thought.

Galileo's move

Move (1): The Galilean redefinition of the object

Galileo exponent of a new *zeitgeist*,¹⁷ focused on practical experiments¹⁸. By meticulously noting the initial, intermediate, and final values of phenomena, he enabled systematic comparison—across different settings or under varied conditions. The importance of this methodological shift cannot be overstated.

In his day, an Aristotelian atmosphere reigned. Objects were considered emanations of inherent potencies, driven toward their natural realization. The dominant tone was one of teleological dynamics. The world was a tangled web of turbulent forces, emanating signatures of divine will, thereby imbuing the perceived environment with intrinsic meaning. A falling stone, for instance, "wanted" to return to its natural place.

Galileo's innovation was to represent these processes in the guise of numbers that could be compared. This provided a model that allowed for the prediction of organized, technical operations. The world, once explained by divine intention, became controllable through human intervention.¹⁹ Nature, as he famously stated, became a book written in the language of mathematics.²⁰

Crucially, Galileo did not need the potentialities attributed to objects by Aristotelian physics. He made use only of their measurable dimensions. He did not deliberately abstract away their teleology; he simply discarded it as obsolete for his practical purposes. His approach was spectacularly successful for the manipulation of the

¹⁷ Figures like Oresme, G. Bruno, R. Bacon prepared the ground.

¹⁸ A degree of relativity is in order. Galileo also made use of thought experiments in some cases executed by others. The falling objects from a tower have been executed by Christian Huyghens in the Netherlands. The fall of objects in vacuum was of the experiments executed on the moon thus quite recent.

¹⁹ Contrary to the popular version that Galileo got prosecuted because he defended a heliocentric approach, the decisive reason is different and relevant for our story. Heliocentrism was not an extraordinary idea. It got also considered by scholars in the Vatican itself. Margolis even notes that by the time that Galileo's *Dialogue* appeared there were no Ptolemaics left (1987:277/282). The breakpoint was not even heliocentrism at all but the tides. This aside, the real issue was that undertakings of that kind had to be considered as no more than models or instrumentalities in calculations. The final and definite truth found expressing in the bible as the word, as the signature of God. Apart of his arrogance and audacity getting parties on their nerves – he knew the pope as a friend from college, when proposing his contribution in which he took over the model of Copernicus; he insisted that it pictured how it really was, contrary to the version of the church. With this he actually valued the model proposed above the bible, an act of heresy. But with this also – and of importance for the actual context, he judged the scientific approach above the points of view offered by religion. For an interesting elaboration of the subject, Margolis, 1987.

²⁰ Understanding the world came in three steps. The first was realized by deciphering the bible as the word of God, a task only within reach of the clergy. The second came down to an understanding of the will of God by deciphering the book of nature written in the language of math. Descartes provides a good example for this. And finally, at that time still to come was to understand nature in a direct way. Locke for instance left God out of the equation.

environment. However, this success resulted in a profound conceptual shift: the redefinition of the object. It was transformed from an entity filled with intentional tension into an inert unit characterized solely by its measurable properties. It should be clear that Galileo had no explicit intention to redefine ontology; this new conception of the object followed naturally from the success of his method.

And it is, perhaps superfluous to state, precisely how we understand an object today: as an inert unit defined primarily by measurement²¹

But what is the importance of this Galilean redefinition for the evolving concept of mind?

Galileo discarded all dynamic, teleological characteristics from his model of nature. However, these characteristics did not vanish from human experience. One could accept that a block of marble did not inherently "strive" to become the figure of an athlete. But what about the growth of a plant?

While its incremental progression could be measured day by day, the force-dynamic of growth itself—its vital impetus—escaped the measuring rod. More pressingly, what about felt emotions or perceived qualities like colour? These remained vividly experienced, yet orphaned by the new scientific schema. To what aspect of the now-mechanized world could they be attributed?

Tacitly, by default, these exiled qualities became annexed to the realm of consciousness. They coalesced into that which would only later be formally indicated as "qualia"—a term coined by Charles Sanders Peirce in 1866 and later adopted by Clarence Lewis in 1929. This orphaned realm of subjective experience became widely known through Thomas Nagel's seminal question, "What is it like to be a bat?"

Galileo's move, therefore, is mentioned here not merely for its scientific importance, but for its decisive role in configuring the modern concept of mind. By defining the objective world as purely quantifiable and inert, he implicitly created its counterpart: a subjective, internal reservoir for all that was excluded.

It deserves to be stressed: alongside the Greek introduction of the invariable essence (*ti esti*), this Galilean "move" is the second pivotal instance defining the trajectory of Western thought. While figures like Oresme and Roger Bacon prepared the ground, Galileo's methodological exclusion marked the definitive onset of the successful scientific method *and* its philosophical shadow—the problem of consciousness.

²¹ Different to the evolutionary explanation given, the object is a configuration fitting the capabilities of the hands.

Move (2): the misrecognition of method for truth

Consider the following excerpt of Kant' Critique of Pure Reason (b-XII)

"Something dawned on investigators of nature when *Galileo* let balls, of a weight chosen by himself, roll down his inclined plane or when *Torricelli* made the air carry a weight that he had judged beforehand to be equal to the weight of a water column known to him; or when, in more recent times *Stahl* converted metals into calx and that in turn into metal, by withdrawing something from the metals and then restoring it to them. What all these investigators of nature comprehended was that reason has insight **only** into *what it itself produces according to its own plan*; and that reason must not allow nature by itself' to keep it in leading strings, as it were, but reason must-using principles that underlie its judgments-proceed according to constant laws and compel nature to answer reason's own questions." (stressing added)

The sentiment is echoed more directly by T.H. Huxley in his debate with Lord Kelvin on the age of the earth: "What you get out as a result is related to what you put in in the first place."²²

Recall Move (1). Galileo applied a particular method—quantification—thereby displacing earlier frameworks in which nature was considered a living, potent totality, described in qualitative terms and understood through authoritative texts (Scripture, Aristotle).

Galileo separated qualitative features from measurable ones, expressing the latter in the "natural guise" of numbers. The former were demoted to secondary qualities; quantities were elevated to primary qualities. The monumental importance of this move was encapsulated in his dictum: "The book of nature is written in the language of mathematics."²³

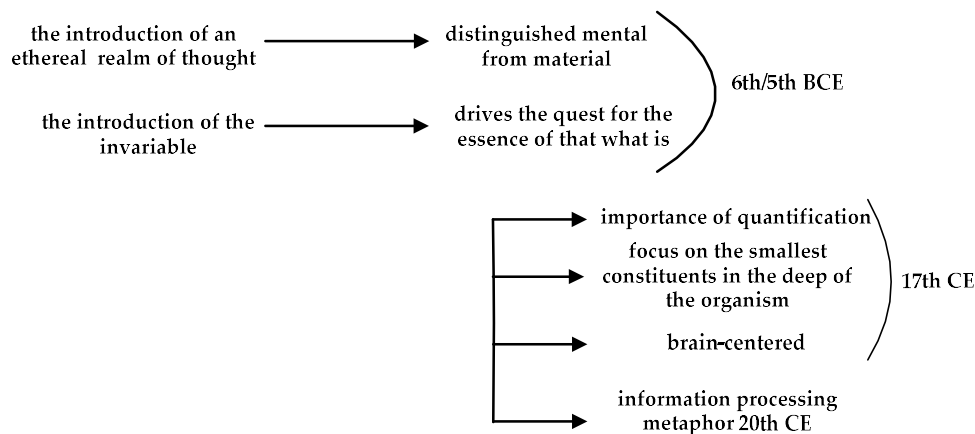
The crucial point is this: if Kant and Huxley are correct, then Galileo's appreciation of nature follows directly from his particular methodological approach. He did not discover nature's pre-existing mathematical essence; he imposed a mathematical framework and found that nature, when compelled to answer within that framework, gave consistent, predictable answers.

Thus, a personal perspective, buoyed by its spectacular success in manipulating the world, gradually ceased to be seen as a perspective. Over time, it was tacitly accepted as THE truth—a mirror-like representation of nature as it really is.

²² Referring to the 1869 meeting of the British Association for the Advancement of Science"; *Discourses: Biological and Geological*; volume 8 of Huxley's collected essays and speeches. Cambridge University Press. (Earlier by Macmillan).

²³ The Assayer; 1623.

This misrecognition added another definitive piece to the puzzle of "the mainstream interpretation." It cemented the belief that the quantifiable, mechanical model was not one useful lens among many, but an objective account of reality itself, thereby rendering the exiled qualitative world (the realm of "mind") an inexplicable anomaly.



A marginal comment on methodology and historical context

In the preceding paragraphs, the conceptual framing—specifically, the hypostatization of analytically isolated parts—has been identified as responsible for the emergence of the so-called "hard problem" or explanatory gap. This analysis clarified that the problem is only "hard" within a particular, historically constituted framework of understanding. While this approach has deviated somewhat from a direct historical narrative, the background provided was necessary to provoke a full understanding of the problem's character.

On the role and importance of Galileo

Only Galileo has been mentioned by name. This is, of course, a historio-graphical shortcut. However important he was, he was not a lone genius inventing insights ex nihilo. He was an exponential figure, the most prominent representative of a broader transnational movement.

Consider William Gilbert, whose meticulous experimental study of magnetism (*De Magnete*, 1600) set a new standard for empirical investigation. Nicolò Tartaglia mathematically analyzed the trajectories of projectiles. Johannes Kepler employed mathematical calculation to describe planetary motion, moving beyond mere celestial geometry. Simon Stevin conducted pioneering experiments in statics and hydrostatics. Francis Bacon, in his *Novum Organum* (1620), provided a theoretical

manifesto for inductive reasoning, arguing for the systematic replacement of deductive scholasticism.

These scholars were not merely theorists; they were often keen inventors of the very instruments that made their new science possible. Furthermore, they operated within nascent networks of knowledge exchange, such as the Academia dei Lincei (of which Galileo was a member), which stimulated the sharing of findings through what would later be institutionalized as the Republic of Letters. Galileo's work, therefore, was both a catalyst for and a product of this collective, instrument-driven revolution.

Conclusion: the mainstream frame unveiled – to what end?

The introduction of an ethereal realm into conscious appreciation, which transformed mythopoeic thinking; the subsequent search for the invariable, installing the era of the ontic and, further down the timeline, the systematic testing of novel methods exemplified by Galileo—these are the pervasive, constitutive factors of a culture-proper narrative.

We are born into this narrative. Consequently, we do not experience it as a narrative, but as self-evident, natural truth. Those who critique its foundations are often dismissed as misguided or regressive.

Here, a critical distinction must be upheld: the efficacy of the new scientific method must not be conflated with a naïve realist belief that its models mirror nature "as it is in itself." The method's power for prediction and control is undeniable, but this operational success does not grant its conceptual framework ontological privilege.

What the preceding analysis has revealed is that this framework is precisely that: a framework. It is a potent, historically local narrative imposed by circumstance and solidified by success—but a narrative nonetheless. This is the essential insight that must now be carried forward.

Mythopoietic thinking as
universal frame of
reference
as fundament for...

Philosophy of nature
as narrative

- the thought > the mental
- finding the essence in the province of the ontic
- rationality and mathematics as method...

>>> scientific description of
nature

= successful negotiation

*Different narratives,
narratives nevertheless*

Biology, ecology and
operationalism as narrative

offering an explanation on
macrolevel on how things and
effects are brought forth

(for instance the concept of a
thought has been introduced, as
has consciousness as an act and
as effect in the experience)

Pivoting to an alternative framework

The alternative proposed here will not constitute a complete rupture with the mainstream tradition. The human will still be considered an object of study—an instantiation, one might say, of the Greek paradigm of inquiry (ti esti). However, the focus will shift decisively. It will be directed, to a large degree, toward behavior in the public arena. This is the domain where action is realized, where adaptation occurs, and where any behavioral repertoire must ultimately prove its viability.

With this methodological reorientation established, we now proceed to outline the sequence of steps that, in their cumulative effect, transformed the hominin into the human.

The steps

0 The animal condition

The basic premise: the shared initial condition

The foundational premise of this account is that the human's initial condition was shared with that of other animals—our most akin relatives in particular. To ground this premise, we will begin with a short excerpt from the introduction to the 2018 book, *The Forgotten Transition*. This will be followed by a systematic exploration of that shared ancestral condition.

As argued in the methodological principles, characteristics become most visible through contrast. Therefore, this shared condition will be brought into sharper relief by subsequently contrasting it with what constitutes the decisive difference: the unique characteristics that define the human perspective.

Umwelt of events

Excerpt from *The Forgotten Transition*

“How can one hope to grasp the continuity of the life process through a mode of thought that can only countenance the organic world already shattered into a myriad of fragments? All it can do is to count up the pieces. What we need instead is a quite different way of thinking about organisms and their environments. I call this ‘relational thinking’. It means treating the organism not as a discrete, prespecified entity but as a particular locus of growth and development within a continuous field of relationships. It is a field that unfolds in the life activities of organisms and that is enfolded (through processes of embodiment or enmindment) in their specific morphologies, powers of movement and capacities of awareness and response”

Tim Ingold in “Alas poor Darwin”.²⁴

Ingold, in the first sentence of his work, refers to the human way of interpreting the world. He then stresses the need for a relational view, expressing a structural coupling between organism and environment.

²⁴ This is a remarkable citation because Ingold as anthropologist also expresses the need for an alternative formulation in which the dynamic character gets the full importance. Mentioning this quote, does not imply that all the elements referred to are getting fully underscored in the present contribution. There is for instance strong reservation concerning the term “enmindment”. It introduces rather unnoticed the idea of an existing instance “mind” alike the existence of an evidently existing instance “body” But both are however of very different order. (in H. Rose and S. Rose, 2001. *Alas Poor Darwin*.:244)

The extent and content of this first world—termed the Umwelt by Jakob von Uexküll²⁵—are delimited by the motor and perceptual capacities of the organism.²⁶ The phenomenal world that emerges is an embodied construct.²⁷ It acquires form at the intersection of the body's possibilities (which act as selective, constructive mechanisms) and the in-principle unknowable exterior presence that serves as its substratum.²⁸ This is not a passive reception but an active generation.

At this level of experience, there is no frozen snapshot of the world, no static object. The Umwelt has only the character of a continuous event.²⁹ It is the instantiation³⁰ of a structured coupling³¹: the organism, intertwined with those elements in the stream of sensory input that obtain relevance in relation to its needs and constructive capabilities. The condition is fully dynamical

In this phylogenetic setting, a reflective, detached attitude is inconceivable. There is only total engagement a continuous, motivated alertness governed by primary

²⁵ The description of the first world is fed by different insights. Later in this exposition this theme will get the attention which it deserves. Brett Buchanan exposes a somewhat similar approach in explaining perspectives taken by Uexküll, Heidegger, Merleau-Ponty and Deleuze. (2008)

²⁶ The idea to appreciate different modes of perception as separate channels (auditive, visual etc.) fits into an anatomical scope of a mechanic nature (see the 2nd world infra). In case of a deficiency of the visual channel for instance, the intervention will justifiably not include corrective actions on the auditive channel. But understood on the level of the phenomenal, for an organism being in the world there is nothing else than one comprehensive experience. This understanding is affiliated with what is called synesthetics. Cfr. Cytowic, R. E. (1989).

²⁷ Concerning what is externally present and perceptible Locke discerned the real versus the nominal essence. The former refers to the world imposing itself onto the senses, but it can only be known by the perceptive receptors. These produce a by the body of the organism biased impression which in turn is called the nominal essence. (Essay concerning human understanding, book 3, chapter 6).

²⁸ The construct is not only determined by what the anatomical apparatus brings within reach. Experiences from the past also contribute to the molding of the perception. As such the present is perceived through the lens of the past. Cfr. to Gregory (1974) "Perceptions are constructed by complex brain processes, from fleeting fragmentary snaps of data signaled by the senses and drawn from the brain's memory banks – themselves snippets from the past... On this view all perceptions are essentially fictions; fictions based on passed experience selected by present sensory data." (Noble & Davidson 1996:120) This idea is akin to Edelman's concept of "remembered presents" (1990).

²⁹ The depiction of a world consisting solely of events is not new. It was already formulated as process philosophy by Alfred North Whitehead (who worked with Russell on the Principia Mathematica) in "Process and reality" dating from 1929. The author suggested that reality consists of actual occasions i.e. events. In such a world, relation is central in the dynamic. This stands in contrast to the usual accepted dichotomies such as subject-object, mind and body, living organisms versus dead matter. Objects in that context are nothing else but patterns of recurrent events. The view here presented differs from Whitehead's. For him objects seem more to be given in the context of events. While here, the stress is on the character of the object as a cognitive construct, a construct seeming to obtain its form from and through the manipulation of means. Another point of difference however not of importance here is that his view finally gives rise to a process theology, while the actual proposal is secular in all its aspects.

³⁰ The term 'instantiation' originally stems from computer science where a program instantiates rules in a specific or local context. Likewise the term refers here to the particular implementation of the concept 'structural coupling', implying the incarnation of structural coupling as an abstract concept, into a real existing form or instance. It could also be understood as materialization, in this case not into an inert material substance but into a dynamic tension involving organism and event as dynamic instances.

³¹ The term stands for a structure determined, at the same time active determining engagement of a given entity into or rather with its environment. This engagement results in recurrent tuning interactions leading to a structural adjustment of two or more systems onto one another. Systems engaged in this manner, form a reciprocal source of excitement (more elaborate and original citations in Maturana en Varela, 1987:75 en Maturana 1975:321).

drives—self-maintenance and procreation.³² Imagination³³ occurs, but only when triggered by external factors. It takes the form of what Gerald Edelman (1990) strikingly termed “remembered presents.”³⁴

Along with the absence of detachment, time and space do not exist as abstract, geometrical frames of reference. They are fused with the organism’s existence—they are lived dimensions of its engaged being. As Helmuth Plessner (1975) described it, this mode of existence is fully centric.³⁵

This is but a brief sketch of the first world³⁶: the world that precedes, and exists outside of, experience mediated by reflection and sophisticated instrumental manipulation. It is the life-space, the life-condition of an animal not yet developed into what would eventually become a human. Here, “animal” is not a pejorative but a technical term denoting an acultural state—the absence of complex instrumental mediation and all that follows from it: specific concepts, interpretations, and culturally filtered perceptions. If the term “animal-like state” provokes unwanted associations, it may equally be called the “hypothetical initial condition.”

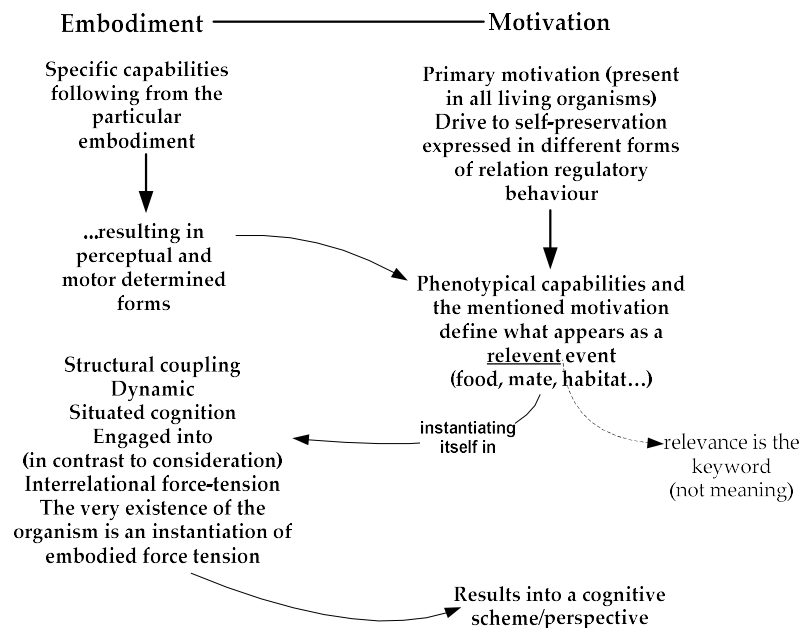
³² Being nothing else than the principal of natural selection, each variation which favors survival and/or procreation will be preserved (Braeckman, J. 2005:102)

³³ Suppose some form of noise leading to a global mobilisation of the organism just as would be the case in a confrontation with a live predator. Observe that the noise is partial in relation to the resulting behavioural effect. So this is a clear sign of supplementation which indicates imaginativity. Gärdenfors (1996) calls this “cued representation”. We opt for the term “imaginativity” in stead of “imagination” a neologism indeed. This and most of the terms normally used in that context such as fantasy and fiction, do have stereotyped meanings with a strong connotation of being not much more than volatile thoughts and consequently not referring to something in the physical world. This interpretation is familiar to the Aristotelian distinction between *phantasia* and *imaginativa* (de Anima, 428a 1-4). It has been of influence until the Late Middle ages. *Phantasia* stands for products of inner workings not necessarily referring to something really existing in the physical world (the mythical unicorn for instance). Imagination on the other hand has a more constructive connotation. The fact that *phantasia* is getting translated into *imaginatio* in Latin does not really help to clear this confusion. Because of the constructive connotation we favour the use of the term *imaginative*.

³⁴ A remembrance or a reactivation of a known issue is always to take literally a re-activation, a remembrance of something that happened in the past. It is to be understood as the phenomenal revival of something which originated in the past brought into the present again, i.e. re-present-ing as an act.

³⁵ Edelman, G. 1989. *The remembered present*. Basic Books, New York. For Plessner, H. 1928/1975. *Die Stufen des Organischen und der Mensch: Einleitung in die philosophische Anthropologie*.

³⁶ Cfr. with Ingold discussing Bergson’s perspective “the World of nature appears already organized like the body of which it forms an extension” (1987:62). Umwelt and organism collapse into one entity.



After this general introduction we will discuss the features in more detail.

Knowing the hypothetical initial condition

Introduction

Two types of worlds must be distinguished. The “first” referring to the hypothetical initial condition is of major importance³⁷. It is a subject worth of study in its own right.

³⁷ Cfr. Stated in the conclusion of an article by Penn, Holyoak and Povinelli dealing with the functional discontinuity between man and (other) animals. These authors formulate the following lamentation: “In our view, the entire field of cognitive science (...) would benefit if more effort were focused on constructing biologically plausible, behaviourally accurate, computationally feasible models of the cognitive abilities of honeybees, corvids and chimpanzees, in addition to the cognitive abilities of the enculturated, language wielding humans” (2008; Darwin’s mistake: explaining the discontinuity between human and non human minds. BBS, 31; p. 129).

Some similar idea of an initial condition can also be found in Piaget’s “Child’s conception of reality and causality”, in particular section IV (1930:237-305) According to the text the young child’s realistic way of experiencing the world or rather his own existence does not have to be learned. On the other hand features characterizing the experience of the modern human are the product of imposed development in a social context. In this sense this primary condition seems not be different to that of animal species most akin to man. For instance, **feral children** never been in contact with civilized humans **do not show** characteristics of **objectification or decentering**. All this in accordance with the remark of Richard Leaky that man is actually the fifth ape and thus initially sharing the same cognitive conditions.

Observe that Kant and Leibniz state that the very young child does not possess what they call the tools of understanding – referring to the basic schemes of causality, time, space etc. So here also there is absence of the features characterizing a person provided with the capacities of reason. But, in their view these are genetically programmed and do not need experience to come into development.

For the present argument, however, it is even more critical: the distinctive characteristics and skills of the modern human species can only be fully understood against the backdrop of this supposed initial condition.

This is the condition we share with our biologically closest animal relatives. At least, this is what a consistent Darwinian approach implies.³⁸ From this perspective, biology concludes that the form and function of an organism are ultimately shaped by selection pressures from its contemporary environment. Cognitive biology extends a similar argument to cognitive processes and abilities.

Yet, beyond focusing on the mechanism of selection, a complementary perspective is possible. Darwin's theory implies that before the hominin lineage embarked on its uniquely human developmental path, it organized perceptual and cognitive input in a manner similar to its closest living relatives—the chimpanzee and the bonobo. This fundamental phylogenetic agreement provides the fertile soil from which all typical human abilities eventually sprouted.

But how can we, who perceive and understand solely through the lens of modern human cognition, say anything sensible about a condition we no longer inhabit? A first-person report in the sense meant by Nagel—"what is it like to be a bat?"—is definitively out of reach.

Nevertheless, we are not completely ignorant. There exist pathways that allow us a glimpse into this foundational condition.³⁹

The methodological strategy: four interlocking approaches

The strategy proposed for understanding the hypothetical initial condition consists of four interlocking methodological positions.

(1) The phylogenetic premise: What are the implications of the human being a species among other species, sharing a recent common ancestry with the great apes?

³⁸ Cfr. Tod Preuss in Gazzaniga (2000; *The biology of mind*. P.1231) referring to this continuity in the conclusion of his contribution "Despite this, adherence to the doctrine of continuity and belief in the basic uniformity of cortical organization have led neuroscientists generally to stress the importance of features of brain organization that are shared widely among species, and to downplay the importance of species differences and the kind of research that is necessary to identify them." An earlier footnote by Coolidge & Wynn is also of relevance here. "These early hominines shared a cognitive phenotype that was indistinguishable in its major components from that of gorillas, chimpanzees and bonobos. These bipedal apes occupied the same cognitive grade as their knuckle-walking cousins." (2009:106) and also "There is no reason to invoke advanced planning abilities, or even foresight (...) beyond the range of modern apes performing hierarchically organized manual tasks." (ibid.:98)

³⁹ Cfr. with Gärdenfors (2006:16) making suggestions such as: 1) observation of different animal species, taking into account what is already known about their respective phylogenetic development; 2) the study of the brain as set of different layers with the eldest or most primitive at the centre while the most recent developments are situated at the outside; 3) the recapitulation theory suggesting/exposing developmental steps and 4) data from archaeological finds and from anthropological studies. For an informative overview on comparative research of the development of animal and human cognition, reference is made to MacLean et al. (2011). Their rationale agrees with the proposed approach "(...) if we understand how cognition evolves in nonhumans, this may in turn inform our understanding of how our own species' cognitive abilities have evolved."

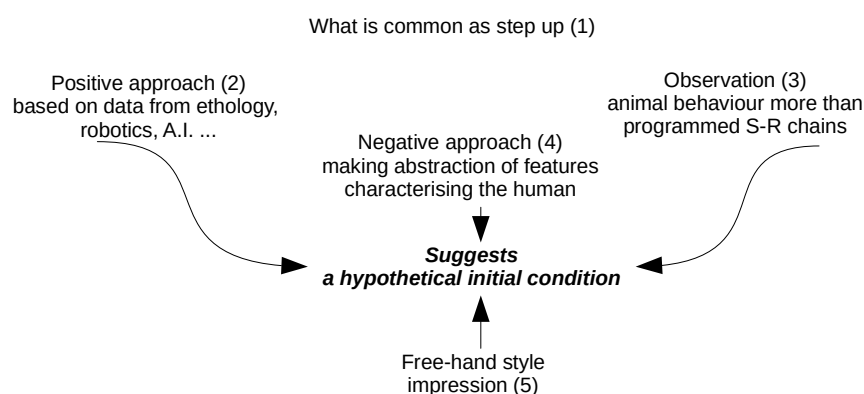
(2) The positive (constructive) approach: drawing from observations of animals in the wild and under controlled conditions, as well as insights from challenges in robotics and artificial intelligence, a constructive picture can be built. This picture suggests the basic architecture of the world for animals akin to us. Theoretical frameworks such as embodiment, situated and grounded cognition, enaction, concepts from Gestalt psychology and constructivism—all of which stress action-based negotiation over passive knowledge representation—can be synthetically applied to enrich this model. This is "positive" because it adds elements to build a plausible baseline.

(3) The qualification of animal intelligence: as a necessary corollary to (2), we must account for robust evidence that animal intelligence and heuristic problem-solving demonstrably transcend the programmed behavior of an automaton. Their cognition is adaptive and situated, not merely algorithmic.⁴⁰

(4) The negative (subtractive) approach: in complement to the positive method, a "negative" approach is also available. We possess abundant knowledge of the features that characterize the modern human species (e.g., complex symbolic thought, extended narrative self-consciousness). The suggestion is to methodologically bracket these uniquely human capacities, thereby rendering an impression of what it is to be in the world without them.

(5) Synthesis and interpretation: while the previous steps are underpinned, to the extent possible, by existing empirical and theoretical literature, this final step involves their synthesis. It bears the character of a reasoned, "free hand" interpretation, resulting in a coherent—if necessarily somewhat impressionistic—depiction of the initial condition.

As a scheme:



⁴⁰ Reference to S. Shettleworth *Cognition, Evolution and Behavior*; also the paradox of Moravec, a computer scientist arguing that human features are relatively easy to mimic while the primary abilities shared with animals are most difficult.

Discussion

1. The common ground

In the first instance, we must acknowledge a profound common ground. Humans are a species among others, biologically distinct only in degree, not in kind. This thesis is no longer scientifically contested, save by explicit creationists (who adhere to scriptural revelation) and implicit ones (who remain convinced there must be "more to it").

Anatomically, humans belong to the chordates, possessing a single dorsal nerve cord. We are mammals and, more specifically, members of the primate order. This heritage includes stereoscopic vision, an opposable thumb for fine manipulation, and, in most cases, a large brain relative to body size.⁴¹ Phylogenetically, the human lineage diverged from our closest living relatives, the chimpanzees, a mere five to seven million years ago—a recent event in the deep time of life's history.

Thus, humans share a basic body plan and physiology with a vast array of other animals. But the similarity extends into the domain of psychological functioning. Evidence is not distant: marketing strategies in supermarkets are designed around primary behavioural responses to scent, taste, colour, and movement, appealing not to higher intellect but to shared, foundational drives. Similarly, the nonverbal dynamics of sexual attraction and rivalry are easily understood as variations on behavioural themes prevalent throughout the animal world.

On an even more fundamental level, core dynamics are shared: the propensity for self-sustenance and procreation—the drive to maintain life and transmit genes—forms the universal engine of behaviour.

The elements mentioned offer only a rough outline, yet they reveal a profound commonality, particularly with other primates. This shared substrate, however, often receives scant attention, as the tendency is to focus on difference, regrettably neglecting the foundational common ground.

A necessary warning:

In striving to understand animal comportment, one must rigorously avoid anthropomorphism. This error not only installs a false image of the animal's experience but, more critically for this project, undermines the pathway to accurate insight by seductively projecting uniquely human features onto other species.

⁴¹ On the relation of the characteristics of the social context and intelligence, see the work of N. Humphrey (1976, *The Social Function of Intellect*); for the relation of the neocortex and the social structure see Dunbar (1996, *Grooming, Gossip and the Evolution of Language*). Katherine Milton in turn argued that the arboreal life of monkeys was more demanding. R. Byrne and A. Whiten offered a synthesis of demanding ecological conditions promoting the development of cognition which than got applied in an ever more complex context.

2. Alternative perspectives for reconstruction

The second step in sketching the initial condition draws from a constellation of fields: ethology, paleoanthropology, archaeology, robotics, artificial intelligence, and relevant psychological and philosophical models.

Given the inherent difficulty of imagining a state of being so foreign to our own reflective consciousness, two distinct narrative versions will be offered. The rationale is that a single perspective may be insufficient; presenting complementary accounts can help triangulate and flesh out a more robust picture of this hypothetical baseline.

Version 1: the world as dynamic field of events

Every species perceives its environment in a specific way. Perception develops within a dynamic tension: between the organism's primary motivations in a given moment and the ongoing flux of the environment.

More specifically, the "image" that forms—understood as a synergistic impression—is, in the first instance, a function of the species' embodiment: what it *can* perceive given its sensory and motor capacities. Secondly, it is a function of the organism's immediate state (e.g., hunger, alertness). Finally, it is a function of what is happening in the environment that might address that state. Perception, therefore, emerges at the intersection of embodiment, motivation, and environmental flux. From this confluence, a salient "figure" arises—the relevant phenomenon..⁴²

How can such a phenomenon be characterized?

The distinction between "seeing" and "looking at" is instructive, paralleling the Pre-Socratic distinction between *noein* (unreflective apprehension) and *blepein* (focused gazing). "Seeing" is a relatively passive mode, the sensory registration of exterior forces. "Looking at" is an active, motivated focussing.

Several aspects are relevant here. Physiologically, if the influx of stimuli results in stable, unchanging patterns, attentiveness wanes. It is only aroused by dynamism—by movement. From the perspective of relation-regulation, the perceiving organism shows acute sensitivity to predators and prey.⁴³ Both share a crucial characteristic: they move.

The result is a foundational behavioural grammar: *rapprochement* in the case of potential nourishment, distance-taking in the case of a threat, or freezing to void

⁴² Figure as understood in Gestalt psychology.

⁴³ The very low level tension between organisms seeking to find dominance or balance.

detection. Predators that do not scavenge instinctively avoid immobile forms, preferring live prey—itself a sign of vitality.

Movement is the key. More broadly, it can be rephrased as "event." Gestalt psychology, with its emphasis on dynamic qualities and the figure-ground structure, is far more appropriate for describing this world than a mechanical stimulus-response model.

In this Gestalt, what moves commands the foreground, becoming a vivid "figure" against a vague, undifferentiated "background." This dynamic field, where events obtain salience, must be considered a unified system—a fusion of organism and environment. This mode of being has a clear affinity with the world of the very young child, who has not yet learned to discern itself from the outer world.⁴⁴ In its experience, self and world collapse into one undifferentiated field. In the experience, child and world collapse into one.⁴⁵ The idea brought to attention is twofold. First, non-human animals partake in this same type of unified, event-centered experience. Second, and critically, this type of world is not populated by sharply distinguishable, static objects but by dynamic, valenced events within a continuous field.

Version 2: the motivated Umwelt and the here-and-now

As soon as an animal's senses are open, it experiences the world as a dynamic, fluctuating field. If the geometry of this field were projected onto a sheet, its form and volume would be defined by the scope of its sensory capacities. This projection would not be circular. For a predator with forward-facing eyes, the visual world takes the shape of a triangular lobe. For a grazer—the prototype prey animal with sideways-oriented eyes—it covers a region of nearly 300 degrees. Each sense organ renders its own perceptual volume; their merger creates what von Uexküll termed the Umwelt. To this sensory volume must be added the motor volume—the space of possible action—giving full existence to a particular life-world.⁴⁶

⁴⁴ Cfr. Kellman on Wertheimer's "gemeinsammens Schicksals" In Gelman, R. & Au, T. (eds) 1996; Handbook of Perception and Cognition. Chapter 1:p.23

⁴⁵ J.J. Gibson observes that "The words 'animal' and 'environment' make an inseparable pair. Each term implies the other. No animal could exist without an environment surrounding it. In the same sense, though not that obvious an environment implies an animal (or at least an organism) to be surrounded" (1986). We are dealing with the experience of having a world. Gibson on the other hand talks about form and function of (parts of) the organism. But the unity of the organism with its Umwelt agrees with the general idea. This very idea appeals to another quote which might only superficially be related to the actual discussion. According to W.D. Hamlyn, Theophrastus in De Sensu refers to Empedocles who does not make distinction between sensation (the physiological processing of input), perception (being the interpretation of the aforementioned input) and the act of thinking. So apparently for these people the three elements would have been experienced as one single fact or movement. According to Hamlyn the discrimination between sensation, perception and thought as three different domains became introduced in the period of Aristotle (1961). The suggestion implied is that the act analyzing into different parts is a particular perspective introduced at a certain moment in history. See also the later explanation of mythopoetic thinking.

⁴⁶ Observe the difference with a Newtonian approach building a structure along three vectors.

This world is neither neutral nor static. It is in constant flux. Whether fluctuations are perceived depends entirely on the organism's sensory capacities: what cannot be grasped does not exist within that world. Crucially, the pressure of primary motives is decisive. Hunger gives rise to a specific sensitivity for stimuli that promise to fulfill that need. If the animal is satiated, food within reach may be ignored as if it were absent. Primary motives not only motivate movement; they strip the Umwelt of neutrality and invest it with relevance.⁴⁷

This description reveals a fundamental principle: motivationally-fed sensitivity is the necessary condition for salience. Without it, everything remains "dull," synonymous with background. This sensitivity is a kind of openness to a specific kind of event. For the event to register, something in the field must move. Therefore, movement is the decisive criterion for breaking the perceptual ground.

To appreciate this more fully, contrast it with the modern human orientation. While we remain susceptible to movement (as supermarket marketing exploits, hooking into these ancient systems), our primary negotiation with the world seeks more formal, static features—we "look at" (bleiben) objects. For modern man, the world is populated first by entities susceptible to manipulation. We not only refer to "the chair," but also reify "goodness" or "an inch" as if they, too, were concrete, manipulable things.⁴⁸

A final, defining characteristic of the initial condition is its confinement to the "here and now." Experience is enclosed within the immediate situation—strictly bound to the local and the current. There is no anticipatory "looking ahead." What appears as foresight in animals (annual migration, squirrel caching) is of a different, non-propositional order, attributable to genetic programming and situated cognition, not to projection or planning.

Summarizing sketch:

The organism experiences its existence as an indivisible unity—a dynamic field of turbulences. Certain turbulences gain figure-value and become events in strict relation to the imperative of primary motives. This mode of existence is radically enclosed within the local conditions of the immediate present.

⁴⁷ "Meaning" will come much later with the use of means as stimuli of 2nd order (Vygotsky). This is already a human mode.

⁴⁸ See Von Meinong for an in depth discussion on ideal objects like "golden mountains".

Two complementary elements in the initial condition: imagination and association

1. *Imagination: triggered vs. self-Initiated*

The modern human, shaped by culture, can readily recall past situations from distant locations and construct representations of future actions. He can, so to speak, displace himself in imagination across space and time.

This capacity is not entirely exceptional. A form of triggered imagination is also present in animals endowed with a central nervous system. The scent of a predator can evoke vivid excitement in prey, even in the predator's physical absence. Humans know this phenomenon well—the smell of incense reviving memories of church, or a scent triggering Christmas scenes.

Thus, animals are not devoid of imagination. This observation supports the forthcoming argument regarding Moravec and Shettleworth: animal experience is richer than a mere automated stimulus-response chain. However, a decisive difference exists, as the examples reveal. The animal undergoes imagination; it is cued and carried by an external event.⁴⁹ The human, by contrast, can self-initiate imagination voluntarily, as an act of will.

2. *"Thinking": episodic vs. semantic-systematic association*

The second element relates to the act we cautiously call "thinking." The term is used reluctantly, as "thinking" is a concept that isolates specific processes from what is, in the initial condition, a global, integrated action. Its use already implies a certain cultural and anthropomorphic perspective.⁵⁰ Even with this caveat, a clear distinction between human and non-human animals is evident in their associative processes. For both, association is central. In the animal, association is primarily episodic—it connects elements based on personally experienced events from the life history. In the human, while episodic association remains, the structure is dominated by semantic content (e.g., definitions, categorical relationships) and organized into systematic series following the rules of logic, rhetoric, and narrative. Animal procedures are supported by instinct or consolidated through recurrent experience. In humans, these are complemented and often superseded by deliberately constructed mental models, scenarios, and narratives—products of that very same self-initiated, imaginative effort.

⁴⁹ External is actually an inappropriate naming. The idea is to refer to what goes beyond one's initiative - but referring to this in that kind of wording would be an anachronism. External is used as shorthand for situations like feeling hungry - which anachronistic would come called internal - situations overcoming the animal. Heteronomously cued would be a more appropriate reference.

⁵⁰ Reference to the forthcoming part on the introduction of some instance like a "thought".

Synthesizing the sources

Thus far, we have attempted to sketch how a non-human animal might experience its world, or at least to indicate some fundamental differences from the human mode. With one particular exception, none of the ideas proposed here is original; they are synthesized from a rich interdisciplinary literature.

The immediacy of animal embodiment was clear to Schopenhauer (*Parerga und Paralipomena*, 1851), who observed that animals lack a human sense of time, do not ponder future or past, and thus do not experience mortal dread—their experience collapses with the senses and conditions of the moment.

The primacy of motives driving all organisms is articulated in the concluding paragraph of Darwin's "On the Origin of Species".

The relational, regulatory tension is borrowed from Watzlawick, Beavin, and Jackson's *Pragmatics of Human Communication*.

The "dynamic fluctuating field combines von Uexküll's *Umwelt* with von Ehrenfels' dynamic arrangements.

The experience as a unified whole, different from the sum of parts, follows Wertheimer's Gestalt principle.

The multi-dimensional perceptual volume has affinity with R. Cytowic's work on synaesthesia.

Relevance within the field is attributed to Koffka, and the "figure" concept to Rubin (both assistants to Wertheimer).

Fluctuations gaining relevance as a function of motives relate to the structural coupling of Maturana and Varela.

A world of events was prefigured by Whitehead.

The primacy of movement as a perceptual criterion is illustrated by Ostrovsky and supported by data from sight-recovery patients (Gregory & Wallace; Fine; Huber; Held; Molyneux/Degenaar).⁵¹

Recognition of static features as non-native is argued by Hamlyn, with Moore adding that this competence, like language, must be learned.⁵²

Confinement to the "here and now" is expressed in the Bischof-Köhler hypothesis and noted by Povinelli, agreeing with developmental observations by Suddendorf and Busby.

⁵¹ Degenaar, M. 1996. *Molyneux's Problem; three centuries of discussion on the perception of forms*. Kluwer Academic Publishers.

⁵² Reference also to the work of Mendes pointing out that children younger than one year fall back on spatio-temporal features. Little by little older children pay more attention to features of the objects themselves and the category of objects the item is a member of. (Mendes, Rackozy and Call: 2008. Ape metaphysics: object individuation without language. *Science Direct*, 106 (730-749)

The value of heuristics in problem-solving is discussed by Kahneman and Gigerenzer.

Triggered imagination is captured by Edelman's "remembered presents", Damasio's "projective memories", and Gärdenfors' "cued representations".

The single original insight for which no prior reference could be found is the decisive distinction between heteronymous cueing (triggered by external events) and autonomous cueing (self-initiated by the organism). Precisely this feature may be of pivotal importance in the development of modern humanity.

3. The richness of heuristics

The third perspective counters the Cartesian conviction of human exceptionalism, which reduced animals to mere automatons.⁵³ This naive view is now refuted from an unexpected quarter: not psychology, but artificial intelligence and robotics. The Moravec paradox is striking: contrary to the common assumption, implementing "high-level" reasoning in machines is relatively easy, while replicating the low-level sensorimotor competencies of a child is profoundly difficult. This inverts the traditional hierarchy of cognitive sophistication.

The message is that the so called difficult processes seem "relatively" simple to reproduce.

Similarly, evolutionary biologist Shettleworth observes that heuristic problem-solving in animals is capable of navigating quite complex situations.⁵⁴ Insights like these refute the image of the animal as a dumb brute executing simple stimulus-response chains. They might not be provided with the higher cognitive capacities humans testify of; their cognition is never the less quite rich in its own right.⁵⁵

4. Speaking of the higher cognitive capacities humans testify of, this is exactly the subject to be discussed now and referred to as the fourth element in the scheme presented earlier.

⁵³ See for instance Donald stating that animals cannot think and are creatures of conditioning reacting to the present or the immediate past. For a more balanced discussion, see John Cottingham (1978).

⁵⁴ The following cases offer some illustrations. Dr. Alice Auersperg at the Department of cognitive biology of the University of Vienna has a cockatoo which is able to open a complex lock requiring five steps to be executed in a defined order. The example of the orang utan getting a nut, which is at the bottom of a glass tube, by spitting in water so the nut starts floating up in the direction of the mouth of the animal (dr. Joseph Call, Max Planck institute, Leipzig). Primates proved to be able to recognize faster than humans ever could, fifteen different numbers in a certain order (Dr. Tetsuro Matsuzawa, Institute for the study of primates, Kyoto). I have to admit not being all too happy with Heidegger's statement that "der Stein ist weltlos, das Tier ist weltarm, der Mensch ist weltbildend". What hinders is that an animal is qualified as being "poor in worlds" in contrast to man being able to imagining worlds. He means it correct – an animal cannot initiate an imagined world - but that is not imply that an animal's world is poor. (Die Grundbegriffe der Metaphysik, Freiburger Vorlesung 1929/30; Klosterman 1983:261.)

⁵⁵ All depends on how the "higher" in higher forms of cognition comes defined.

There is abundant literature on the features setting man apart from the other species however each author proposes a different favourite catalogue⁵⁶. This subject deserves a full treatment⁵⁷ what can not be achieved in scope of these pages.

However, a specific methodological move is possible. We possess detailed knowledge of these uniquely human features. The suggestion is to bracket them deliberately—to subtract them from our model. The rationale is that by removing these exceptional competencies, we may better approximate the world of non-human animals—a world our ancestors once shared with their closest kin. This "negative method" complements the positive reconstructions offered earlier.

That man is the only organism using tools and symbols as a primary means of negotiating the world is a largely uncontroversial, yet fundamental, observation.

Some animals employ tools, but these are used in an incorporated fashion—as immediate, dedicated extensions of bodily dynamics for a single task.⁵⁸ Any "development" in this context is not comparable to the sophistication, complexity, and multifunctionality that characterizes the human toolkit.

In the human way of life, tools, instruments, and means in the most general sense constitute a distinct, mediating field—a realm of artifacts that positions itself between the human and the world.⁵⁹

Consider linguistic signs as the prototypical example. They exist as a manipulable set, "at hand". Their use enables a novel, intrusive mode of world-negotiation, following paths of analysis and synthesis. This leads to an imaginative expansion of the phenomenal field. As a direct implication, the human is no longer bound to the immediate physical environment. Through signs, he can think and communicate about the absent, the past, and the possible. Using imagination he expands the world he experiences. Signs used as instruments allow to think and also to communicate with conspecifics about what is out of sight, about what happened in the past.

This skill reaches its pinnacle in self-objectification: the act whereby a human takes himself as an object of observation and commentary. Here, a species among species appears that can, without apparent effort, consider its own being. More broadly, the entire world, humanity included, becomes an object of mediated manipulation.

⁵⁶ Reference to the chapter of *The Forgotten Transition* discussing "The difference making the difference", in particular XIV.1.5.

⁵⁷ W. Stockzkowski (2002) offers a splendid overview.

⁵⁸ What Köhler calls "incorporated".

⁵⁹ Compare to Bruno Latour's view on the world as a field of action in which organisms, institutions and infrastructural instances come considered as equally important agents.

This is the process by which man gives rise to a world he takes for constructed reality. Within this construction, language operates as a primary technical interference.

Examine image schemata, simple structures ubiquitous in daily life. "Finding oneself in a room" employs a container schema. This schema is then projected onto non-physical situations: "finding oneself in difficulties". The latter is not literal; it is a trope. Similarly, metonymy operates: "There is a Rembrandt on the wall." The man is not hanging there, his painting is. Such expressions are abundant. Consider "an animal gives birth". The animal is not handing over an object; the process of birth has been objectified, rendered as a thing that can be transferred. Or "time runs out" and "time flows." If time existed materially, it would have neither legs nor liquid properties. These are not descriptions of reality, but linguistic acts that construct the framework through which reality is apprehended.

Thus far, we have offered a few illustrations of how the confinement to the "here and now" is transcended and the phenomenal world expanded through imaginative, symbolic techniques.

In summary: the human can expand his experienced world exponentially and, furthermore, include himself as an object within that experience. This allows him to consider that world, and his position in it, as if it were a landscape spread out before him for inspection.

These are some of the quintessential qualities that characterize humanity and set it apart from the animal experience of the world. The methodological suggestion is to bracket these very qualities—the "negative approach" mentioned earlier. By doing so, the human peculiarity evaporates, giving rise to an approximate picture of a pre-modern human experience: the hypothetical initial condition.

This may seem to transcend the stated aim of describing the animal condition. Yet it is a preferred strategic contrast. In the distinction, the defining features of the human become more sharply appreciable.

5. An impressionist depiction

Previous contributions centered on knowledge gained from experiment and theory. It is now time to offer a more impressionist depiction, where empathy and disciplined imagination play the leading role.

To begin: imagine there is no faculty of language, no capacity for speech. This single omission has immediate and far-reaching consequences. Without speech, no verbal thought can take form. This is no small subtraction. Consider an experience devoid of any internal verbalization. The unrelenting, endless inner voice is silenced. No

ceaseless consideration, judgment, or commentary; no lamenting the weather, no admiring a sunset in words. No verbal cueing of past events, no planning of future enterprises. The world as molded and organized by language vanishes.

What remains is a kind of silence—not absolute, but an absence of words, descriptions, judgments, and scenarios. In its place stands existence in its full, unmediated immediacy. Consider a cat on a windowsill. It sits. It instantiates sitting; occupied only by the demands of the moment.

It may seem paradoxical to use words to depict a wordless state, but the previous lines offer a hint, allowing us to go a step further.

We will now also leave means behind. The use of means—tools, instruments, technology—is the very hallmark of the human condition. There is scarcely any human activity in which means are not involved. Language itself, just discussed, is a means for transferring declarative information. As Bertrand Russell observed of his intelligent dog, it never shared information about "the kindness of its parents". Declarative content is absent. Human language, apart from emotive exclamations, is all about declaration, and this is only possible through the manipulation of the means we call words.

But means permeate existence far more broadly: they protect from the weather, provide food, enable hunting, farming, and transport. They are, in Gregory Bateson's phrase, "the difference that makes a difference."

The purpose of this exercise, however, is to bracket these means—to imagine them nonexistent. "Einklammeren", to put them aside, as Husserl proposed. A world without language was a landslide; a world without instruments is a seismic shift. It reduces all operations upon the environment to the direct actions of the body. No club, knife, or wheel—let alone a smart-phone. Only what the native capabilities of the body allow is within reach. Existence is characterized by the dynamic body in direct relation to other dynamic bodies and to the Umwelt. This is a mode of mere being—not "pure" in an idealized sense, but brute, raw, and unmediated. An existence devoid of verbalization implies no object of reflection; it is pure engagement.

Rounding up: the hypothetical initial condition

The combined methodological approaches—positive, negative, and impressionist—offer a composite glimpse into how non-human animals might experience existence. The motivating insight is that humanity was once a species among others, and in that position must have shared a common life-world. This principle, at least implicit in Darwin, provides the stepping stone for sketching a hypothetical initial condition.

The first element of this condition is the organism's experience of itself and its environment as an undivided unity. This unity is animated by primary motives that provide dynamic tension and direction, with movement serving as the central criterion of salience.

From a different angle, insights from artificial intelligence and robotics suggest that an organism in this condition is capable of far more than executing simple stimulus-response chains; it employs rich, adaptive heuristics.

The approach that assembles these insights can be called positive, as it constructs a model from observable elements. It is complemented by a negative pathway, which deliberately brackets the unique competencies that set modern humans apart from all other animals. This dual strategy—registering what is known of shared capacities, omitting what makes us different, and acknowledging the sophistication of non-human cognition—suggests a coherent image of a hypothetical initial condition. While hypothetical, it is not without empirical and theoretical grounding.

This reconstructed condition then becomes the platform from which, under the specific pressures of time and place, new abilities—or rather, skills—would have begun to develop.

"Skills" is the preferred term, as the basic methodological perspective shifts focus from innate capacities to the ways an organism discovers new means of negotiating its changing niche. Negotiation, needless to say, implies handling, manipulation, and action.

Comparing formal characteristics: a methodological interlude

What is the purpose of drawing a sharp distinction between the world as experienced by a modern human and that of a non-human animal?

A critical consideration on the style of mainstream discourse

Firstly, the exercise is informative. Depicting both "worlds" as distinct frames of reference allows us to apply and understand theoretical terms with appropriate precision, avoiding conceptual smuggling.

Consider the following quotes from MacWhinney's chapter on language emergence (in Givón, 2002)⁶⁰:

⁶⁰ Givón, T. & Malle, B.F. (eds.). The evolution of language out of pre-language. John Benjamins Publishing Company.

"This mechanism (the workings of mirror neurons) provides a way of *equating* actions performed by *the self* with actions or postures performed by the other."

Given that this describes a being not yet possessed of language, the sentence contains three remarkably anachronistic concepts: (1) equating, (2) the self, (3) the other.

"Equating" is used in an implicit way in the same sense as modern humans would exert an act of equating. So the sense appropriate in world two is used on an individual still partaking world one conditions, being these of the workings of mirror neurons on top of that in the absence of linguistic competence. The act of equation as exerted by modern humans is a matter of consciously making a choice out of alternatives which can be fired up by impulse or equally well on an act of evaluation of features. The same argument goes for the apparently spontaneous use of references made to "the self" and to "the other". Has the organism in question already of a sense of self, of "the" self? Has a chimpanzee a sense of being a self or is it a raw emanation of what it is like to be a chimp? Is having a sense of self implying a degree of consciousness, a knowing about, not a characteristic of the condition of a modern human? And the reference made to "the other", is there already present a sense of the other as an instance on a distance?

Further on the text states:

"Early hominids could use this ability to imagine various ways of picking up clubs (...)"

Against the fact that this alleged behaviour is still based on the workings of the mirror neurons the question into the nature of the mentioned act of imagination arises. As the situation is depicted – being able to imagine the advantages of certain clubs above others - this is a case of self initiated imagination. Question is if an early hominid experiencing existence only in the local and the actual and entangled in a direct i.e. not reflective way into the fluctuations of the environment, is able to initiate himself imaginative scenes in which he evaluates the advantages of different clubs?

In the latter sense imagination is to be understood in world two as frame of reference and not appropriate to use in the case of a hominid still residing under the conditions of world one.

MacWhinney also hypothesizes about "perspective levels," including one for "causal action chains." We must again ask: in what sense is "causal" understood? Does it refer to a learned association between recurrently paired events (a World One pattern-strengthening), or to an insight into a relational principle, possibly involving argumentation (a World Two cognitive achievement)?

It becomes clear that bold, explanatory statements are often built upon vague, anachronistic assumptions. They suggest a great deal but do not withstand scrutiny when the fundamental difference in experiential frameworks is taken seriously.

If Darwin is correct—if humanity once existed in conditions similar to our closest kin—then the imperative is to circumscribe those initial conditions as clearly and rigorously as possible, free from the contamination of later conceptual frameworks.

The next step: a positive listing

The question remains: what type of characteristics should be listed? A hint was given earlier: the focus must be on the public scene, where the phenotype proves its viability within an actual environment. Consequently, of utmost importance is how the hominin experiences its environment—the nature of the phenomenal scene that appears to it.

Therefore, the characteristics listed below pertain to the phenomenal dimension—the result of how the hominin organizes sensory input into relevant scenes. The way a situation is "taken to be" guides the resulting behaviour (within the constraints of embodiment). In this sense, phenomenology is the key.

The list will focus on the assumed characteristics of the Initial Shared Condition (ISC). As argued, contrast facilitates understanding; therefore, the corresponding characteristics of the Human Condition (HC) will also be indicated.

Insights listed do not come in a logic serial order.

Preliminary: could an ape see colour, an illustration of the animal condition

Could an ape see colour, I wondered. Without any doubt would be the answer rather astonished about so much naivety.

But on closer inspection, the question can be approached from different frames of reference. The first is the anthropomorphic perspective, which applies the human register of knowledge. As humans, we understand colour as the experience produced by specific electromagnetic frequencies, interpreted by our visual system. From this physiological standpoint, we can ask if apes are equipped to capture the same frequency range. For chimpanzees, the answer is positive.

Recall that, following Locke, colour is a secondary quality—not inherent to the object, but an attribute contributed by the perceiver.⁶¹

Yet, even this formulation remains within the human conceptual scheme.

⁶¹ Remarkably Berkeley went a step further and considered all perceived qualities as secondary. Here one can preview Kant's appreciation of the thing as it appears in perception and the thing in itself that escapes knowing.

This is not what is meant by the question, "Could an ape see colour?" The question at stake is whether the ape would appreciate the seen as a colour—as a distinct category of phenomenal quality. There is strong reason to doubt it. It seems far more plausible that the animal does not recognize "red fruit" as fruit-with-a-particular-colour, but as "*something-ready-to-eat*." I have italicized something because, devoid of the symbolic language that underlies our mode of categorization, the animal will not recognize the something as fruit either.

The ape exists in a direct bound relationship with that which is suitable to eat. In its experience, it does not "eat"; it engages in an action that we, from the outside, call eating. To appreciate this mode of experience, we must omit two defining features of the human approach: linguistic labeling and reflective distance.

The animal's experience is characterized by immediacy. There is no mediating concept or reflective stance distancing the actor from the object. There is a single, solid engagement, the consummation of which results in what humans would retrospectively term "satisfaction".⁶²

Here, "anthropomorphism" is not used pejoratively, but descriptively: it signifies an account given from within the human frame of reference—a framework constituted by knowledge derived from symbolic mediation.

The aim of this note is to grasp, however partially, the ape's mode of experiencing its Umwelt. Similar to perceiving "something-ready-to-eat," a male ape does not see an attractive female but senses an opportunity-to-mate. It does not recognize a predator but experiences a compulsion-to-flee. It does not identify an alpha but navigates a field of dominance-to-defer-to.

As established, the Umwelt is one of direct experience, where meanings are not expressed in words but are lived as immediate relevances within a field of engagement.

As a reminder, the following comparative distinction will be applied:

(ISC) Initial Shared Condition: Perception is a direct function of the organism's primary motivational state, channelled through its bodily capabilities.

(HC) Human Condition: The ISC is complemented and often overruled by the implementation of a symbolic frame of reference. This system enables narration — the self-initiated provocation of displacements in space and time within experience. It allows for forms of categorization (e.g., "absent," "future," "category X") that are

⁶² Later I found out that René ten Bos, in his book "*Het geniale dier*" offered a similar situation with a tick not interested in human blood but in a warm substance to feast on. (2008, pp. 194-196)

alternative to, and often abstracted from, the motivational frames of reference that govern the ISC. Let's start the not exhaustive listing.

1. Ontological presence vs. declarative absence

(ISC) Ontological condition:

A newborn craves for food (breast milk). This craving is the condition the child is in; it is a manifest presence, a positive state of being.

(HC) Logical interpretation of the condition:

A human observer comments, "The milk-providing mother is absent." This is not a description of the child's being, but a logical, declarative statement. It is a "technical" appreciation, made possible only by the use of symbols. The declaration is noncommittal in contrast to the unconditional reality of the child's craving. On the level of being (ontos), there is no contrast to a present condition; one simply is in a state, or there is nothing. "Absence" can only be constructed through the manipulation of symbols—second-order stimuli that provoke imaginative content about a state of affairs, distinct from being immersed in it.

2. Mode of presentation: iconic vs. narrative

(ISC) Iconic: the world is presented iconically. Perception yields a tableau vivant—a single, holistic scene devoid of formal signs, symbols, or language. There are no names, labels, or verbal descriptions. Perception is direct and unmediated, consisting of what the eyes see, ears hear, etc.

Illustrations: analogue communication (Watzlawick, Beavin, & Jackson, 1967); the iconic format of innate concepts (Carey, 2011); the direct perception of affordances (J.J. Gibson).

(HC) Narrative:

The modern human world is a narrative construct. All that is perceived is named, labeled, and framed within stories. Events do not merely happen; they are accompanied by commentary, explanation, and plot.

3. Perceptual structure: synesthetic vs. analytic

(ISC) Synesthetic/holistic:

The phenomenal image is total and synesthetic. Sound, light, smell, and sensation fuse into a single, enveloping medium—a "melting pot" akin to an immersive theatre.

Illustrations: The structure of synaesthesia (Cytowic, 1989; Robertson & Sagiv, 2005; Ramachandran & Hubbard, 2006); cross-modal perception as foundational (Deroy & Spence, 2013).

(HC) Analytic/Modular:

The perceived scene is analyzed into discrete perceptual modalities (sight, sound, etc.), each experienced and discussed in its own right. The synesthetic unity is broken by categorical distinction.

4. Positionality: centric vs. eccentric

(ISC) Centric/egocentric:

World and experience are a unified field, akin to that of a newborn who does not discriminate between the suckling and the mother's breast as belonging to "another." The condition is one of immersive centricity. The term is only meaningful by contrast to its opposite ("decentred"), a condition nonexistent for non-human animals.

Illustrations: Feral children show no objectification or decentring (Piaget, 1930). Chimpanzee theory of mind appears purely egocentric (Hurford, 2014). Chimpanzee vocalizations are "remarkably oblivious" to their audience (Rendall, Vokey, & Notman in Penn et al., 2008); they express experience rather than intend shared understanding (Cheney & Seyfarth, 2005). The centric orientation is evident in young children's drawings (Meykens & Cluckers, 1996).

(HC) Eccentric/allocentric:

The modern human assumes a confrontational, "facing" position toward the environment. He can adopt a decentred or even "God's-eye" perspective (Archimedes' standpoint), as if considering the world from a position outside it. Plessner (1928) terms this eccentric positionality,⁶³ and Carl Ratner as "(...) to make for one self rather than in-themselves" (1991:50). Coolidge and Wynn see being allocentric starting with the homo sapiens (2009:166, 172). Silverman et al. presume that hunter-gatherers developed a more spatial perspective in order to find base camp after the hunt led them astray (2000).

⁶³ In *Die Stufen der organischen Welt*.

5. Ontological structure: global monism vs. distance

(ISC) Global/Monistic:

Perception and experience collapse into a solid, undifferentiated unity. The organism does not stand apart from its world but is an integrated part of a single phenomenal field.

Illustrations: Piaget describes the child's "protoplasmic" condition, making no distinction between self and world (1929). Wertheimer's "common fate" (*Gemeinsam Schicksal*), where shared movement defines a perceptual unit, reflects this unity (1923). Iverson and Thelen note the fusion of hand and brain into a single movement system (in Radman, 2013). Simms observes that breastfeeding is not an internal event but a "shared reality" between mother and infant (2008).

(HC) Distance/confrontation:

The modern human experiences existential and perceptual distance. He finds himself *in front of* people and things, a relation characterized by confrontation and potential dialogue. The world is an array of separate entities faced by a separate self.

6. Perceptual primacy: dynamic flux vs. static objects

(ISC) Dynamic Flux:

Existence is primordially dynamic. Perception and understanding are organized around movement and change. In the absence of dynamism, a scene becomes blurred and devoid of relevance. This is exploited by animal observers who remain still to avoid detection; the slightest movement disrupts the perceptual field and confers salience. Movement is the decisive factor organizing the scene perceived.⁶⁴ This is very different to the human experience. Even if nothing is happening, man finds himself always confronted with a set of objects (which can be commented on or evaluated etc.)

Illustrations: Alfred Northrop Whitehead stresses the dynamic character of existence in a publication with the title "Process and Reality" as early as 1929. Wertheimer mentions "common fate" (mentioned earlier). This is also observed by Kellman (in Gellman, 1996). Ostrovsky points out that movement is the binding factor in perception, by this presenting units. (2009:7) Heft mentions a similar point of view. (2015:254) The dynamic character of world and life is also stressed by Logan (2007:43). The primacy of movement can be inferred from the fact that recognition of static features is not native but has to be learned. (Hamlyn, 1979) This is confirmed by Cathleen Moore referring to a skill which has to be learned, see

⁶⁴ Movement has to be taken in the broad sense not restricted to the visual. A different scent moves the air, the same for the slightest sound.

also Mendes et al. for a similar point of view (2008). In that respect the case of blind people able to see again after a surgical intervention is quite remarkable. They have to learn to see and recognize objects again which does not occur for Gestalt figures. (Gordon, 2004:16)

(HC) Static objects:

The modern human world is populated primarily by static, persisting objects. Even in the absence of activity, one is confronted with an array of entities that can be identified, evaluated, and commented upon. Dynamism is an attribute of objects, not the foundational ground of perception.

7. Action and orientation: Unity vs. dimensional Framework

(ISC) Perceptual-motor unity:

Perception and motor action collapse into a single, unified dynamic. The perceived and the graspable constitute one volume of existence; the organism does not plan a path and then walk it—the walking is the path-making.

Illustrations: J.J. Gibson stresses precisely this unity of perception and motor, of organism and environment. (1979:8) Varela states that “the path the wanderer goes is laid by the walking itself” (1987) and Ingold in the same senses writes “the world of nature appears already organized like the body of which it forms an extension” (1987:62)

(HC) Dimensional frame of reference:

Human orientation occurs within an abstract, three-dimensional spatial grid crossed by the linear arrow of time.⁶⁵ He navigates this frame from a seemingly external, confrontational stance. Life is scheduled via agendas, yet he experiences the freedom to adhere to or neglect these stipulations. This framework enables decontextualization—considering things apart from their immediate setting.

8. Mediation of action: incorporated vs. symbolic

(ISC) Direct, incorporated action:

Action is direct. If an implement is used (e.g., a chimp cracking a nut), it functions as an incorporated extension of the body—a seamless prolongation of motor dynamics (Köhler).

⁶⁵ This is the Newtonian model we actually are most familiar with in organizing life. Since the beginning of the 20th century there is also the suggestion made by Einstein and most recently there seems to be a brand of modern physics wanting to get rid of this time-space framework completely. But whatever the model suggested the correspondence lies in the fact that they all take measurable coordinates into account even in the latest case there is a tendency to refute these.

(HC) Mediated action:

Virtually all human action is mediated by tools or, fundamentally, by symbols. Language itself is the paramount skill enabled by this symbolic instrumentation.⁶⁶ As a note in the margin, in my view mediated manipulation i.e. manipulation making use of implements is the hallmark of the human species; it is the difference making the difference.

9. Temporality: immediacy vs. deliberation

(ISC) Temporal immediacy:

Intervention is immediate and without delay, emanating directly from the primary motivation in relation to local conditions. Being collapses with time; the organism is its present engagement.

(HC) Deliberative distance:

The human capacity for "taking into consideration" implies a temporal and evaluative distance. It allows for the weighing of alternatives before responding to a situation.

10. Response pattern: direct engagement vs. substitution

(ISC) Direct, straightforward response:

The response to a provoking situation is a straightforward instantiation of the organism's intertwining with its milieu.⁶⁷

(HC) Substituted/sublimated response:

The human response can take the form of a substitution or sublimation—a symbolic or displaced action that stands in for a direct one.

11. Perceptual organization: figure-ground vs. discrete objects

(ISC) Gestalt figure-ground:

Experience is best described by Gestalt principles. A fluctuation in the environment, made salient by its relevance to the primary motivation, becomes "figure" against a vague, receding "background".

⁶⁶ Cfr. Penn et al. "whatever "good trick" (Dennett 1996) was responsible for the advent of human beings' ability to reinterpret the world in a symbolic-relational fashion, it evolved in only one lineage – ours. Nonhuman animals didn't (and still don't) get it" (2008:129)

⁶⁷ In relation to the three instances of directness, observe what Leibniz already in the 18th century noted in the New Essays on Human Understanding "Beasts are sheer empirics and are guided entirely by instances."

Illustrations: There is an abundance of publications on Gestalt psychology from Wertheimer, Kofka and Rubin but also more actual as by I.E. Gordon (2004). Mendes et al. offers an indirect illustration for the primacy of Gestalt figures by pointing out that children under the age of one year do not show signs of object-individuation.

(HC) Discrete, demarcated objects:

The environment presents itself as a collection of clearly demarcated, isolated units ("capsules of being"). While Gestalt organization persists, the human can focus attention on a single, bounded object, abstracting it from its ground.

12. Permanence: figure permanence vs. object permanence

(ISC) Figure permanence:

A salient figure (biological-ecological predisposition) retains its foreground status for a time even if occluded (e.g., prey behind a bush). This is an innate, perceptual-motor expectation.

(HC) Object permanence:

Permanence is reconceived as object permanence—the understanding that manipulable objects continue to exist independently of perception. The "figure" transforms from a valenced event into a persistent thing.

Illustrations: Piaget documented the staged development of object permanence, beginning around eight months and consolidating by twenty-four months. Crucially, each stage must be provoked and built upon the previous one; it is not spontaneous.⁶⁸

13. Temporality: context-bound vs. displaced/abstract

(ISC) Context-bound (here-and-now):

The organism is bound to the immediate situation—the local place and the present moment. It collapses with its current motivational field, unable to anticipate future needs or act outside of present drives (Bischof-Köhler hypothesis).

Illustrations: (these are relevant also for the characteristics discussed later and coined as 'being bounded to the particular' and "the experience of time specific to a particular species")

The hypothesis suggested by Bischof-Köhler has already been mentioned but has also been mentioned by Povinelli (2000, 2004). This scholar described earlier already

⁶⁸ Compare to the zone of proximal development as suggested by Vygotsky.

that chimpanzees do not hold representations about entities situated beyond the reach of perception, a condition best understood as closedness of the actual and local scene or Umwelt (1993). He adds that noncommittal information is not shared (about the weather for instance), and that references about space and time too are absent. (2003) In a later publication he qualifies the behaviour of apes as homeostatic oriented, meaning that all efforts are directed in maintaining a stable condition of life, while humans show a strong tendency to expansion. Nashida and Hiraiwa observed that the making of an ant fishing rod took at most seventeen minutes by this offering some indication about the perspective in the time dimension (1982). Mithen makes a similar statement. He observes that there are no reports about apes making tools for use in a not immediate the future. Producing and using a tool follow each other in one movement (in Margolis, 2007:295). Suddendorf and Busby point out that anticipation, implying that the experience being bound dissolves, develops only gradually in human children (2005). Experiments with apes show that effects are tied to obtaining some reward which can be considered as another indication for a perspective of being bound to the actual situation. Postponing remuneration over a considerable span of time does not occur. Parker and Mibrath argue that anticipatory planning cannot be realized if language is not available. Meant is language based on the use of symbols. (in Gibson and Ingold, 1993:314) Being bound goes with cognitive closure, terms referring to more or less the same condition. The latter is discussed by Chomsky (1975), Fodor (1983) and McGinn (1991). Whether or not an organism finds itself in a condition of being bound to the local and the actual situation is discussed at length by W.A. Roberts in a chapter titled "The question of temporal and spatial displacement in animal cognition" (in Wasserman and Zentall (eds.), 1996, Comparative cognition). The problem remains undecided, more research is in order. But the chapter offers an elaborate discussion. The same volume also offers a contribution of Zentall leaving more room for the alleged ability in animals to transcend the condition of being bound.

Displacement is yet another term for what is understood as mental time travelling opening new informative resources as Suddendorf and Corballis (1997) for instance. From another perspective Osvath and Gärdenfors stress planning in anticipation as a necessary condition for the coming into being of language, cooperation and social structures present in human populations (2005). Discussions with corresponding views can also be found in Rendall et al. (2008) and Hurford (2014)

(HC) The modern human is able to transcend the above type of being bound. The planning of future action disconnected from the pressure exerted by the primary motives is getting executed in most cases with little or no effort. The future has even

become an abstract concept in its own right meaning that one can think of the future as some instance existing out there. From another point of view it could be said that the human has a semantic choice. Not that he is completely free to choose the worldview he prefers on a strict individual base. He has to pick the explaining scenario from what is on offer in the social cultural group he is a member of. Meant is that he not is exclusively bound to the conditions of embodiment and previous experiences as other animals undergo but can – rather has to even doomed to – adopt an arbitrary understanding of what is going on (magical mysterious, pan psychic, poly or monotheist etc.)

14. Particularity: bound to the specific vs. generalizing

(ISC) Bound to the particular:

Experience is of specific, concrete events. Hunger is not an abstract problem but this particular craving in this particular place.

Illustration: Povinelli (2000, 2004).

(HC) Generalizing abstraction:

The human can distance himself from the particular, understanding a specific event (e.g., danger at a crossroads) as an instance of a general category (e.g., "risk"). He operates with abstract problems, not just concrete needs.

15. (ISC) Implicit heuristics

The heuristics applied in real life situations are acquired through genetic transference or learned imitation, perfected through experience.

Illustrations: For a discussion on the underestimation of implicit heuristics, Hauser and Santos (in Margolis, 2007:284). Further, through her research as a biologist Sarah Shettleworth observes that the abilities of animals on the basis of implicit heuristics reach much further than usually taken for granted as an inheritance of 17th century ideas of animals as automatons. Consider the case of the orang-utan bringing a nut from the bottom of a narrow glass tube by spitting a mouthful of water into it in order to make the snack afloat and bring it within the reach of the fingers. In that context Shettleworth also refers to the work with primates by Tetsuro Matsuzawa. Tompson and Fleming in turn point out the ability of apes to perform a type of reasoning based on the use of analogue (in Penn et al., 2008:149).⁶⁹ The power of heuristic thinking in general, so also in the human, is put forward by Kahneman and Tversky on the basis of long term research. The results were finally

⁶⁹ For more references on the heuristic abilities of animals: Vaesen, 2012:239 and 241.

put down in the bestseller "Thinking fast and slow" (2012). However, their suggestions were in an early stage already contested by Gigerenzer in "Simple heuristics that make us smart" (1992:25). Hans Moravec, a mathematician engaged in designing robotics declares that abstract thinking based on the use of symbols is not that difficult to imitate, but simple motor actions on the other hand are (1988).

(HC) Explicit instruction

The implicit mode is of course also present in the modern human. But it is complemented if not superseded by explicit instruction discursive in nature and, by way of demonstration.

16. Goal structure: single objective vs. complex scenes

(ISC) Single, affordance-driven goal:

Attention, perception, and motor behaviour are unified and directed toward a single, salient "figure" defined by immediate affordances (e.g., something-ready-to-eat). Tool use, when present, is rudimentary, non-cumulative, and does not imply a conceptual "tool category." It grows from perceptual affordances, not abstract knowledge.

Illustrations: documented by absence of it as in "...the behaviour of animals in relation to tools is rudimentary and in no way to compare with the technology of even the most simple of the human cultural forms. There are no animals known making use of fire, no animals systematically making new tools, improving older versions, using tools to make tools and transfer the accumulated technical knowledge to the next generation." (1988, Basalla) Schick et al. also point out the poor development in that area (1999, in Santos et al.). Hauser and Santos in turn state "...although a number of animals manufacture and use tools, such behaviour does not entail evidence for a concept for tool or artifact more generally. Rather, tool use may grow out of a particular good sense of the functionally relevant features associated with tools, a sense driven by affordances or perceptual categories as opposed to conceptual knowledge." (in Margolis 2007:287) Byrne describes in detail the cognitive quality of the handling of tools by chimpanzees in particular that they are able to apply some precision, aim accurately with a hammer stone and perform sequential acts. But this very same author also remarks: "...apes' level of accuracy is unlikely to be anywhere near that shown in the stone tools of Lokalelei" (Oldowantype). (2004:39, 40)

Sophie de Beaune (2009:1) observes that this type of simple behaviour even occurs in the precursors of the modern human. "The cognitive abilities of the ancient hominins appear to have progressed relatively slowly, insofar as the material

evidence that they left behind is concerned. In fact their technical productions which appeared more than 2.5 million years ago, improved very little for nearly the entire period (i.e. about 2 million years)." Something similar in Coolidge & Wynn "There is no reason to invoke advanced planning abilities or even foresight (...) beyond the range of modern apes performing hierarchical organized manual tasks." (2009:98) Further in the same text "These early hominines shared a cognitive phenotype that was indistinguishable in its major components from that of gorillas, chimpanzees and bonobos. These bipedal apes occupied the same cognitive grade as their knuckle-walking cousins." (2009:106). Darwin in "*The descent of man*" observed that the fundamental intuitions must have been the same. He also confirmed that "My object in this chapter is solely to show that there is no fundamental difference between man and the higher mammals in their mental faculties" (1871, chapter 2:35-36)

(HC) Multiple, complex scenes:

The human experiences complex scenes containing multiple items of attention, integrated with a temporal dimension stretching from past to future. Planning involves managing concurrent and sequential objectives.

17. (ISC) Heteronymous definition

The organism is captured by factors whether fluctuations in the environment or urging conditions imposed by the primary motivation.

(HC) The ability to choose autonomously from alternatives

The modern human is able to postpone satisfaction, to neglect options or to choose from alternatives.

18. Imagination: triggered vs. self-initiated

(ISC) Heteronymous activation (triggered imagination):

Imaginative content is cued by external stimuli (e.g., a scent triggering the "presence" of an absent predator). In the absence of such a cue, no reactivation occurs—a condition analogous to childhood amnesia, where early experiences are not self-retrievable.

Illustrations: Gärdenfors refers to this as 'cued representation' (1996, Gärdenfors and Osvath). Bickerton in turn calls this 'offline thinking' (1996). Hurford offers a discussion on mental representations in that context (2014:62-4). The available literature on imaginative displacement at the same time clarifies about the condition in which this ability is not present. Friston (2005) and Bar et al. (2006) refer to ability

to predict and infer from this interesting data on what it must be like not to possess that particular ability. The same can be said of the work of Suddendorf and Corballis discussing mental time travel (2007). Suddendorf continues this trail in "Mind the Gap" (2013). Simulating future events is also discussed by Schacter, Addis and Bruckner (2007). For childhood amnesia: Davies et al. (2008); Bauer (2004⁷⁰, 2010); Eacott et al. (1998); Sutcliffe & Reese (2008)

(HC) Self initiated imaginativity

Using means as stimuli of 2nd order, the modern human provokes scenes in his and the imagination of others, about events which are not taking place in the actual situation. This allows description and building of models. As soon as the child learns the skill to make use of 2nd order stimuli, the condition of child's amnesia takes an end.

19. Information: embedded experience vs. manipulable content

(ISC) The informative dimension as a result

As imagination mentioned provokes a particular experience, this experience is the direct expression of what today would be called informational content.

(HC) The manipulative character of the informational component

As mentioned in the ISC mode, the informative component is inherent to imagination. Making use of 2nd order stimuli, this can be provoked by the modern human implying that the informational component is prone for manipulation too.

20. Stimulus and agency: determined value vs. selectable nature

(ISC) Determined stimulus value

Behaviour is triggered by heteronomous factors, meaning perceptions and experiences have a fixed, coercive stimulus value directly tied to motivational states.

(HC) Selectable nature of the stimulus

While humans also respond to primary stimuli, they possess the extra option of self-initiating imaginative content via second-order stimuli (symbols). These self-generated conditions can, in turn, initiate new behaviours, decoupling action from immediate environmental triggers.

⁷⁰ Bauer, Patricia. "Oh Where, Oh Where Have Those Early Memories Gone?" *Psychological Science Agenda* 18(2004); Eacott, MJ, and RA Crawley. "The offset of childhood amnesia: memory for events that occurred before age 3." *The Journal of Experimental Psychology: General* 127(1998): 22-33.

21. Unconditional, egocentric expression (raw relation regulation)

(ISC) The unconditional nature of relation regulation

The organism is engaged in a dynamic tension between its primary motives and environmental fluctuations. Its vocalizations and signals are egocentric expressions of this immediate, internal state—raw relation-regulation, not intentional information transfer. The organism cannot choose but to express the behaviour dictated by its motivational condition. As an illustration, assuming that the male hormonally is in the appropriate condition in the vicinity of a female also in that condition he cannot choose but exposing the needed behaviour. This is the only possibility and as such it is not even a possibility but a coercive condition.

Illustrations: The concept of relation regulatory is borrowed from Watzlawick et al. (1967). Rizzolatti et al. observe that calls made by apes follow other neural pathways than human vocal expressions and they rather express the experience of the moment than information directed to conspecifics. It comes down to an egocentric expression of the stance taken in relation to the conditions of the moment – the informational value is not intentional (1996). Tomasello observes that chimpanzees do not point, not demonstrate, not hand over and not teach intentionally. (2000) With that he emphasizes the egocentricity and raw relation regulation character of their behaviour. The signals exposed, he observes in another publication, are restricted to the drawing of attention and the exposition of commanding gestures. (1999:36 and also 2003) They never demonstrate behaviour which can be taken to be declarative. Remember Russell quote about his dog never referring to the kindness of its parents. Teall and Povinelli offer a striking illustration of the risk of anthropomorphizing “Chimpanzees demonstrate behaviour which by human observers easily is taken as being the drawing of attention”. Their research indicates that this is probably not the case. Cheney and Seyfarth also stress the raw relation regulatory character rather than being informational “Although monkeys vary their calling rates depending upon the presence and composition of their audience, they do not act deliberately to inform ignorant individuals, nor do they attempt to correct or rectify false beliefs in others or instruct others in the correct uses or response to calls.” And “Instead monkey’s calls reflect the knowledge the signaller has rather than the knowledge the signaller intends his audience to acquire.” (2005:150-151) Also Noble and Davidson caution against an anthropomorphizing approach in interpreting signals of animals as meaning transferring vehicles. (1996:138-9) Smith in “The behaviour of communication, an ethological approach” stresses behaviour rather than the idea of the transferring of information characterized by displacement in time and space. (1977). Further Bickerton observes that “(...) no signal within the repertoire of great apes exhibits its functional reference (...) animals simply choose

signals that directly impact their fitness (...) responses to events in real time (...) the signals themselves evolved for purposes that make combination, displacement etc. wholly irrelevant." Consider that displacement implies the quality considered to be informative, meaning that animals do not inform about but only regulate the condition they find themselves in. (in Arbib & Bickerton, 2010. *The emergence of Protolanguage; Holophrasis vs compositionality*. Amsterdam/Philadelphia John Benjamins. P. 170

(HC) The conditional character of relation regulation

The modern human too is strongly motivated to give in to the mentioned regulation of relation. This dimension is part of any training in communication with publicity as a particular example and propaganda as its extreme. Remember the pivotal role of Bernayes, the nephew of Freud in all this. But the ability to manipulate informative content opens the possibility to for instance resist this urge, postpone or divert behaviour into more acceptable manifestations. So for the modern human the relation regulatory dimension is no longer exclusively coercive.

22. Knowledge mode: engagement vs. propositional "knowing that"

(ISC) Raw relation regulation (placeholder)

This has to be considered in line with items 8, 9 and 10 (ISC) referring to the instance of "figure" as understood by Gestalt-psychology to which the organism relates in a raw regulative way. The actual entry has to be fictional because there is nothing to serve as complement for the following characteristics of the modern human.

(HC) Relation regulation and the knowing that...

However the characteristics mentioned in this entry already have been mentioned under different headings, it is appropriate to unite them under the heading "knowing that... ". This is about narration taking the form of some discourse or version, the consideration expressing a knowing that, the making public of commentaries in which reasons and arguments get organized in a meaningful and above all a convincing way. These characteristics are also present when discussing a topic as consciousness.

23. Spatiality: embodied reach vs. referential frame

(ISC) Embodied and movement determined in the sense of limited space

Space is defined by the reach of the senses and the motor abilities, the latter as displacement as well as grasping.

Illustration: The idea is implied in Gibson's approach stressing the entanglement of sense and motor abilities, of the organism and its environment or niche. The erect position characterizing the human taken for granted, the motor influence of the posture on the environment is lost out of sight. But take the very different position of a grazer being an animal of prey characterized by a panoramic view in contrast to an ape living in the canopy better served by a stereoscopic view. Perception and motor wise these open very different types of Umwelt. On bipedalism, Marcel Mauss already in 1938 observed that there is no such thing as a natural way of bipedal locomotion. As such the posture taken by a particular species defines in decisive way the perspective on the environment. It defines the type of world it will be. Epstein and Rogers (eds.) "Perception of space and motion" (1995) is also of relevance for this aspect.

(HC) Referential abstract space.

Being conscious of distance in different directions results in a three dimensional frame of reference which due to the ability to consider detaches itself from the centre of the ego and takes the position as a god's eye perspective. It results into a highly abstract concept allowing the attribution of coordinates forming configurations prone for measurement. Reed quite strikingly speaks about "receptacles of objects" (in Gordon, 2004:147)

24. Temporality: species-specific "now" vs. referential timeline

(ISC) Species-specific "now":

Time as experience is in the first instance physiologically bound to a species. Every species has a specific duration of what is getting experienced as humans call a now-moment.⁷¹ Factors such as the rate of the heartbeat play a central role. The heartbeat of elderly people has a lower rate resulting in a somewhat faster flow of time in the experience. It is self evident that the rate of processing of visual imprints is even more of importance. For a falcon the rate is 300 frames a second resulting in a slow overall visual impression allowing optimal registration of differences occurring in the visual field. In the human the rate is 25 frames a second. Slow motion film projects 70 or 100 frames a second, less than 25 frames speeds up the visual experience. For the actual subject the message is that time as an experience of the actual moment is species bound and that this experience collapses with the earlier mentioned embodied and movement limited space. The research of Pöppel showed that the human "conscious now" is about two to three seconds. (1978; *Time*

⁷¹ This does evidently not occur in animals' experience of being.

perception in Held et al. Handbook of sensory physiology – Vol. III Perception) The not conscious experienced sensory speed is much faster and expressed in milliseconds.

(HC) Referential time line or experience

The human just as other creatures cannot find him self neither in another locality than the one he is in, nor in another moment of time; so far for the fact. However making use of imaginative displacement he is able to construct a timeline onto which events can be projected. Applying instruments realizing order, this line can be divided into coordinates with regular intervals. In the same way as in referential space events and actions can be pinpointed with precision. This artificial frame of reference supports the human in disconnecting from the position of being bound to the local and the actual.

25. Technology: incorporated tools vs. complex, multi-purpose instruments

(ISC) Incorporated, single-purpose tools

In negotiating the conditions of the Umwelt, some animals make use of supporting implements. As mentioned it is only getting used for one particular purpose. Moreover the instrument is incorporated as Kohler observes. It is in a direct way an extension of the body and bodily forces. There are however animals showing consecutive steps as in a procedure. But the result has no comparison with the distribution and the combination of subparts into complex tools as realized by the human.

Illustration: Byrne observers “(...) apes level of accuracy is unlikely to be anywhere near that shown in the stone tools of Lokalalei” (in Margolis, 2004:39-40)

(HC) Complex, multi-purpose instruments:

Often language or discursive thinking is seen as characterizing the human being. But without hesitation, the application of action mediating tools can be considered to be the watershedding feature. As has been said, the complexity is extremely sophisticated and many instruments can be applied for more than one purpose.

26. Bodily awareness: kinesthetic schema vs. cultural body image

(ISC) Kinesthetic body schema

This refers to the whole of processes involved in taking and maintaining posture and the conjunction of the workings of the different body parts. This takes place unconsciously.

Illustration: Povinelli (2000, 2004)

(HC) Cultural body image

On top of the unconscious functioning bodyscheme as referred to in the ISC the modern human disposes of a body image. In relation to the cultural customs which are local and historical determined, it defines how the body will be appreciated. In the 16th century a corpulent shape expressed being well fed which was a condition highly praised while in the second half of the 20th century being skinny was the ideal. However most people are caught by this type of fashion unconsciously, in principle the process takes place in the conscious realm.

27. Inquiry: The "that" vs. The "why" and "how"

(ISC) Engagement with the "that"

Organisms engage into something "that" is happening, "that" is the case.

(HC) Why and how?

Like for any other organism "that" *what is the case* is of importance. But the human adds other types of questions too. They want to now why it is happening and how it has to be done.

28. Significance: relevance-as-existence vs. synthetic meaning

(ISC) Existence as relevance (bounded functional instantiation):

Both terms existence and relevance refer to the same be it with a different emphasis. Relevance collapses with the responding abilities of the body in the situation of the moment. This condition could also be called bounded functional instantiation. It is not some condition attributed but is the way an organism is coping the burdens of survival given the condition of the environment. In that sense as soon as an organism is a life there is relevance.

(HC) Synthetic meaning (arbitrary representation):

The human is able or rather doomed to consider him self. The latter qualification arises from the observation that it cannot be avoided. This implies a perspective of distance taking in relation to something or some aspect alien to the considering self. With this the identity mentioned under ISC evaporates. In stead a question opens: what is the meaning of the "I"? In that sense meaning becomes something which has to be attributed, it becomes synthetic in nature. In contrast to bounded functional instantiation, this could be seen as arbitrary representation or meaning

(inevitably embedded in an open end condition). Observe the different denominations. Relevance refers in a direct way to the condition of the primary motivation while meaning is related to the use of means provoking content in the experience.

29. Evaluation: Limbic appraisal vs. value-based judgment

(ISC) Limbic and experience based evaluation of stimuli

The limbic system performs the primary evaluating function. Incoming stimuli are weighed on being feeding or threatening provoking basic motor responding programs. Eventual prior experiences with the same type of stimulus contribute to the way response is organized.

(HC) Value based judgement

Being able to put automatic response on hold in combination with the ability to consider, the stimulus can be put under evaluation in relation to acquired or chosen criteria. This ability is so powerful that it can resist the pressure of the limbic system. This is a complicated process in which tensions and equilibria play a role. But for the actual discussion the goal is to bring this ability under attention.

30. Fire: fate vs. means

(ISC) Fire as fate

Apart of the exceptional case of the Australian fire falcon, no other animal handles fire. Preutz et al. observe that chimpanzees might expose a cautious attitude in relation to fire instead of an automatic flight reflex, but there are no signs neither indicating actual manipulation i.e. manipulation of fire. (2001)

(HC) Fire as means (instrument)

For the human fire seems instrumental in exactly the same way other means are. It is used to keep enemies on a distance, to cook, to smelt ore, to protect against cold etc.

31. Social cognition: implicit perception vs. reasoned "theory of mind"

(ISC) Theory of mind

This is about understanding goals, intentions and beliefs of others in the sense of "I know what you think or want".⁷² The relevance of this subject for the actual

⁷² One of the first if not the first contribution in resolving this problem was written by Premack and Woodruff in 1978.

discussion is that the presumed intentions of others also make part of the way the world shows itself.

In line with the Cartesian view that animals could be understood as automatons, the answer traditional was they did not. But nowadays opinions are far apart.

Illustrations: Hurford for instance argues that the theory of mind in chimps seems to be restricted to recognize what they themselves have in mind, so purely egocentric oriented (2014:51). Also Penn and Povinelli respond in a negative way (2007).

On the other end of the spectrum Call and Tomasello defend a positive but nuanced view. "In a broad construal of the phrase 'theory of mind', then, the answer to Premack and Woodruff's pregnant question of 30 years ago is a definite yes. Chimpanzees probably do not understand others in terms of a fully human-like belief-desire psychology in which they appreciate that others have mental representations of the world that drive their actions even when those do not correspond to reality" (2008:191)⁷³

Influenced by the following I feel inclined to join the more nuanced view.

A filmed documentary on the work of Frans de Waal showed a chimpanzee performing a complex act of deception going far beyond a direct way of acquiring food. Further I am strongly convinced of the high degree of development of implicit heuristics as suggested by Shettleworth. Thirdly I am aware of the importance of behavioural cues which at first sight go unnoticed. So I think that in the end at least the great apes have a rich perception of the situation eventually leading to complex strategies however I have to admit that this terrain is not well documented. But in this rich way of experiencing the world language as the human is familiar with is completely absent so explanations and declarations are non existent.

(HC) Reasoned theory of mind (propositional and narrative):

Apart from the mode explained the human is able to built theories about the behaviour, the intentions and the verbalized believes of others. An investigator can deduce someone lying on the basis of observed cues he learned in instruction. But in the same sense everyone has his arsenal of theories such as 'a man with a shaved head and tattoos of skulls on the arms is most probably politically right wing'.

The layer of language opening narration and declaration is making the difference.

Both layers can be taken to stand apart. But there is also an interrelation, even a transmission from the lower to the higher. Some basic attitude can a) be translated into words and b) providing a seemingly rational justification. In reverse rational arguments can postpone or altogether inhibit basic attitudes.

⁷³ Does the chimpanzee have a theory of mind? 30 years later. Joseph Call and Michael Tomasello, 2008; Trends in cognitive science, Vol. 12 No.5: 187-192

(more) *Illustrations*: Sodian (2015); TOM not native, Dunbar (1996); Astington (2010); Heyes (1998); Hare, Call and Tomasello (2006); on deception by primates, de Waal (1992). Allison Gopnik's take is quite interesting. She suggests that we understand ourselves as such copying how others seem or express to understand us. It reminds of Vygotsky's move in explaining inner speech as an interiorization of outer or explicit speech. Considered this way the theory of mind is not a mysterious capability but a going back and forth of understanding the other and in reverse understanding oneself as the projection of how others understand us. (Gopnik, 1993. How we know our minds. Behavioral and Brain Sciences, 16:1-14)

Conclusion: From heteronomy to partial autonomy

An overarching, remarkable feature distinguishes the two conditions. In the Initial Shared Condition, the organism is fully determined by endogenous and exogenous factors. In the Human Condition, this determinacy remains, but only to a degree. To a significant extent, the modern human organizes the way the world appears, whether intentionally (as in agriculture) or as an unintended consequence of instrumental action (as in the ozone layer's depletion). Formulated concisely: while the animal is a subject of life, for the human, life itself becomes an object to be shaped. This may well be the defining feature of the human condition.

Summarizing its core elements yields the following impression of the ISC:

Experience is non-reflective and direct. The state of being alive collapses with the product of embodied perception. Its quality is iconic and synaesthetic, encompassing all senses and motor capacities. What is perceived is not a descriptive scene but a salient "figure" of relevance within the whole field. The way this figure is qualified in relation to the primary motives of the moment determines the dynamic stance of relation-regulation, which directly prepares motor readiness.

This offers a necessary glimpse into the foundational core from which humanity emerged.

(For a comprehensive overview enumerating nearly fifty distinctions—including features like morality, symbolic use, and formalization—see The Supplement to The Forgotten Transition).⁷⁴

Thus concludes the part of this work whose aim was to offer a coherent impression of the starting position—the hypothetical initial condition the hominin shared with

⁷⁴ Researchgate <https://doi.org/10.13140/RG.2.2.32867.12322> (copy and paste link)

its closest kin. In my view, a conscious grasp of this condition is absolutely necessary to achieve a proper understanding of the developments that followed.

1 From event to object

Following methodological observations and a deconstruction of the mainstream framework, we turned to the initial condition shared with our closest kin—an essential step for understanding subsequent development.

We now address the central transition: the shift from a world of dynamic events to a staging of manipulable entities.

Introduction: the spark

The spark of this inquiry occurred while watching a documentary of a chimpanzee threatening an intruder. Its actions seemed clumsy, charged with immediate effort. At that moment, I was handling an Acheulean handaxe on my desk. The contrast was stark. The handaxe was extensively worked, symmetrically formed, and—as I knew from the literature—standardized across distant, unconnected sites. Here was not just a tool, but the fossilized imprint of a new cognitive logic.

This section consists of four short contributions, each illuminating a facet of this coming-into-being.⁷⁵

1. "To the Bare Bone: The Role of the Hands for Human Cognition" offers an impressionistic view.
2. "Grammar of Action and Human Cognition" provides a more systematic analysis.
3. "On the Object" and
4. "The Definition Refined" focus on the conceptual crystallization of the object itself.

1. To the bare bone, the role of the hands for human cognition

The first line interface, an introduction

From a biological standpoint, living organisms are replicating systems. Their fundamental drive is embedded in a dynamic tension: to acquire nourishment while avoiding becoming nourishment. Humanity, as a biological species, is no exception. However, humans developed a unique way of negotiating environmental burdens, acquiring new skills that overrode some restrictions of this basic setting. This success fostered the conviction of inhabiting a wholly different world, veiling our

⁷⁵ As these are earlier texts composed on different occasions although actually adapted and extended; some overlap will occur.

fundamental continuity with it. This new world is, in crucial respects, a comprehensive reorganization of basic characteristics within a new interface.

In short, the human is an animal endowed with the basic conditions of others—but with a decisive twist

All hominins possess and use hands capable of grasping, holding, and moving. Humans are hand-centered in space.⁷⁶ This space is not the abstract, Euclidean container of later thought, but a sensory-motor field defined by what the eye can see, locomotion can reach, and—crucially—the grasping hand can manipulate.⁷⁷ In Euclidean sense space is a novelty only existing in the thinking brought forth by the human kind. Space on the level of experience shared with species most akin comes down to the extent the eye can catch, the reach of locomotion and of the grasping hand. So space is more a dimension of perception and of movement rather than an imaginative framework onto which orienting parameters can be set out.

The fact of being equipped with hands is so trivial it is routinely overlooked. Yet the logic of the hands is of paramount importance. This logic could not have arisen in animals with hooves, wings, or no limbs.

The human way of negotiating the world is not neutral, objective, or independent. It is harnessed and specified by the particularities of the body. The hands constitute the primary interface where world-negotiation occurs.⁷⁸ They set the blueprint for motor directedness, perceptual focus, and cognitive strategies. In short, embodiment is not a minor detail but the formative condition.⁷⁹

A critic might concede that hands are central but ask: is this really worth all the fuss? The following sections will demonstrate that it is not merely worth it—it is the essential key to understanding the genesis of the human world.

⁷⁶ Cfr. N.P. Holmes in Z. Radman, 2013:57-70

⁷⁷ Wynn & Coolidge, 2016 are premature in relating spatial cognition to Euclidean spatial thinking. Because that type of understanding is only possible much later when the use of implements as secondary stimuli provoking displacement and thus projection got introduced. Silverman (1992, 2000) suggested that an Euclidean framed awareness could be based in the division of labour of hunter gatherers.

⁷⁸ In its own context not to be confused with what is explained here. Following Anaxagoras Aristotle considered the hand the tool of tools. But he also considered the hand as the product of the intellect and not the other way around the intellect brought forth by the possession of hands (De Anima, 432a).

⁷⁹ The following contrasting situation illustrates the importance. For a grazer the head is directed to the ground, the lips pulling the grass, the eyes directed sideways alert for eventual dangers. The world experienced is a conglomerate of ground directedness, food and caution. Something similar is the case for the hominin being bipedal and provided with hands to grasp but directed in a very different sense. Further the following are of relevance in relation to the hand as channel of approaching the world: Radman Z. (ed), 2013, The hand an organ of the mind; Napier, J. 1962, The evolution of the hand, The Scientific American; Cagli & Coraggio, 2008, What the draughtsman's hand tells the draughtsman's eye, International Journal of Pattern Recognition and Artificial Intelligence; Tocheri et al. 2008, The evolutionary history of the hominin hand (...), Journal Anatomy; Marzke M.W., 1992, Evolutionary development of the human thumb, Hand Clinics; Almécija & Sherwood, 2017, Hands, brains and precision grips, Researchgate.

The first-line interface: a corrective on the primacy of the hand

To speak of the hand's importance risks missing the point entirely. As the first-line interface, the hand-centered orientation is all-encompassing.⁸⁰ It means that all human interventions upon the world are framed and prefigured by the logic of manual abilities. This logic escapes our notice precisely because it is our nature—the very medium of our being, like water for a fish. Before the human is "linguistic" or "symbolic," he is fundamentally a manipulating being. To understand this, consider a basic taxonomy: all living creatures share primary motivations (life, procreation), but species differ in their operative systems for realizing them.

- A bird negotiates its world through the logic of the wing and beak.
- A tiger, through the logic of the paw, claw, and jaw.
- An antelope, through the logic of the hoof and grazing mouth.

By the way: is it often said that the human is extraordinary – a bird is an organism that can fly – how out of the ordinary is that?

Back to the bird, flying and feeding by using the beak - that is the systematic underlying its existence. That logic is different for different types such as a predator like in the case of a tiger, a grazer like an antelope, the crocodile, the snake etc.

What, then, is the operative system of the creature that would become human?

In our closest kin, the hand serves a dual function: locomotion (knuckle-walking) and manipulation (grasping, holding). In the hominin line, these functions were divorced. Bipedalism specialized the legs for locomotion; the hands were liberated to specialize exclusively in intervention and handling.⁸¹

This is not a minor anatomical footnote. It is the decisive evolutionary specialization: the hands became the first-line specialists for environmental negotiation. Upright walking can be considered a specialization, the same goes for the applications of the hands. They specialize in executing interventions. In summery, they are the first line specialists in the act of negotiation.

The Major consequence:

⁸⁰ The trajectory of the human evolution is brought forth by the use of hands; it does not as a ghost out of Allahadin's lamp emerge from the workings of the neural tissue. Compare with Trivers observing that the brain is functional in surviving not in the task of producing knowledge (2002).

⁸¹ As Leroi-Gourhan stated, the focus shifted from the biting mouth to the grasping hands. (1993; *Gesture and Speech*. MIT; Cambridge-Massachusetts.

All subsequent refinements, heuristics, and cognitive strategies originate within this manual framework and are constrained by its logic. The "handling" of the world is the foundational grammar.⁸²

This development suggests two discernible historical stages:

1. The formation of the perceptual-conceptual Object. The emergence of a perceptual configuration that adapts to and fits the act of manipulation—giving rise to the isolable "form" or "concept."
2. The artifact as second-order stimulus: The subsequent use of the tangible artifact (the formed object) as a second-order stimulus, capable of provoking imaginative displacements in time and space.

Looking ahead: is it so difficult to recognize in the act of speaking a form of object-manipulation intended to produce specific effects? Would it be too bold to state that even language is, at its technical core, a highly refined mode of negotiation conducted within this inherited manual framework?

This pattern is so low-level and primary that it remains veiled, obscured by a historical heritage obsessed with ultimate truths far removed from "vulgar" manipulation.

In short: whatever semantic discourse the human employs to describe his existence—his behaviour, his being—it can, from a technical standpoint, be understood as a form of mediated manipulation, with the logic of the hands providing the inescapable, overarching framework.⁸³

The essence

The erect posture of bipedalism and the liberated abilities of the hands created both the possibilities and the constraints for negotiating the environmental flux. From within this embodied frame, the logic of manipulation defined the form (the isolated object) and the character (the affordance) of the shapes that gained salience in the visual field.

As Lucretius observed: "That which is born creates the use." Our primary instrument did not just find uses; it gave birth to the very world of usable things.

⁸² The automobile whatever the actual degree of sophistication could only be developed within the logic of the abilities provided by the introduction of the wheel.

⁸³ Let us bury the picture of the human provided with special seemingly esoteric "mental" gifts and try to understand behaviour as a particular motor based way of negotiating the world.

2. Grammar of action and of language

The "Grammar of Action" in Stone Knapping: a critical appraisal of its bearing on human cognition

Introduction

The proposal by Dietrich Stout and colleagues of a "grammar of action" as a framework for understanding human behaviour and evolution presents a compelling theoretical bridge. It connects the granular analysis of observable manipulations—specifically in stone tool production—with broad claims about the foundational structures of human cognition. While the title ambitiously invokes human behaviour and evolution in general, the empirical focus rests on the detailed sequencing of tool-making actions. This tension between an expansive theoretical promise and a narrowly circumscribed methodological window forms the crux of this critique. The following discussion will engage with this disparity, ultimately arguing for the necessity of situating such rigorous, quantifiable analyses within a broader, more comparative paradigm to genuinely illuminate the peculiarities of human cognition.

1. The grammar of action

"For more than 60 years, the serial ordering of behaviour has been a core topic for the cognitive and behavioural sciences. Enhanced capacities for complex action sequencing support distinctive human behaviours such as language, imitation and tool-use, and are fundamental to the flexibility that is a hallmark of human intelligence. It has been suggested that this implies a unitary evolutionary and neural foundation for human cognitive uniqueness across domains but this remains controversial. Although modelling suggests computational similarities across behaviours ranging from foraging to language-learning empirical investigation has been limited by a lack of objective, generalizable methods for describing, quantifying, and comparing the sequential structure of diverse, real-world behaviours. In Palaeolithic archaeology, for example, investigation of long-standing hypotheses about the evolutionary relationships between tool-making, language, and cognition have been hampered by the lack of an objective metric for the behavioural complexity of different ancient technologies. Here we adopt a data-driven computational approach to this challenge by using grammatical pattern

recognition algorithms to measure the structural complexity of behavioural sequences from modern tool-making replication experiments – effectively extracting action grammars for critical survival skills from the human evolutionary past.”⁸⁴

This rather long extract catches the core of the set up of the research.

What are the conclusions?

Different techniques such as Hidden Markov Systems, K-Sequitur and the occurrence of Shannon’s entropy allow a detailed and quantified description. It showed that in the production of an Acheul type handaxe two levels of complexity occur while Oldowan type only one. It might provoke the impression that as a critical reader I have been all too short-sighted but this is actually the core of what is getting concluded in the article however with far more detail in the domain of statistics and of neural investigation.

Apart of the fact that this conclusion seems rather trivial, however confirmed in a rigorous way what actually is in the open for all to see, there is something else feeling odd.

The introduction silently promises a glimpse on some deus ex machina fundamental for human way of rendering intelligence. But the research discussed is focussed on a quantitative description based on analyse in which statistics play an important role. Should it rather not be one or the other, either a broad perspective or a restricted window on a particular type of action? What can the latter add to an insight on the former? What does an increase in complexity in serialisation tell about the type of knowledge characteristic for the human?

But there is yet something else feeding dissatisfaction on my part. The following analogy will help to understand.

2. A methodological caution: the problem of prior framing

This dissatisfaction can be further elucidated through an analytical analogy. Consider a Martian observer confronted with humans playing chess. Two investigative stances are possible:

1. The observer is left entirely uninformed, tasked with deriving the purpose and rules of the activity ab initio from pure observation.
2. The observer is first provided with basic concepts (the goal of checkmate, the names of pieces) and then analyses the specific moves and strategies.

⁸⁴ Stout, D., Chaminade, T., Thomik, A., Apel, J. Faisal, A. 2018. Grammars of action in human behavior and evolution. BioRxiv, preprint. Doi: <http://dx.doi.org/10.1101/281543>.

The first, albeit more challenging, position holds the potential for a truly holistic, albeit unstructured, understanding of the activity within the full spectrum of human behaviour. The second, while more efficient for analyzing the game's internal logic, immediately channels understanding down a predefined path. The concepts supplied in advance—"game," "winning," "pieces with set functions"—constrain the interpretive framework. This is the inherent risk in Stout et al.'s approach: the decision to investigate the "grammar" of stone knapping already installs a particular cognitive framework. By choosing a goal-directed, hierarchically organized motor task and analysing it with tools designed to uncover linguistic-like structure, the investigation is pre-loaded to find a specific kind of complexity. It begins on a well-trodden path in the epistemological scrubland, implicitly signifying the direction of travel and potentially obscuring other avenues of understanding.

3. Toward a more generative approach

This critique inevitably raises the question: what form of inquiry would be more appropriate for unveiling the constitutive particularities of human cognition? A promising path forward would involve:

The basic pattern

An analysis and description as offered by Stout et al. comes as all too strong focussed on sub-operations. A step back widening the perspective is required.

The very first question to ask is about the basic aim of an organism. Aim not be understood as the achievement of a certain goal in a far future but as what is the sense of existence while sense is rather synonymous with life itself. What is the basic drive, what is the most fundamental motivation of any organism? Darwin in the last paragraph of "The origins of species" refers to growth and reproduction. Indeed any form of behaviour of an animal can be understood as the fulfilment of these fundamental motives: acquiring food in order to sustain life, looking for a mate to reproduce and taking action to avoid a harmful confrontation. As such the existence can be understood as a never ending endeavour to regulate the primary motivated tension in relation to turbulences occurring in the immediate environment. This type of behaviour has by Watzlawick et al. (1967) appropriately been coined relation regulatory. Further, how an organism experiences the world, what type of world it seems to have has been referred to as world one in "The Forgotten Transition". And

on the level of understanding Pamela Lyon, Fred Keijzer and Van Duijn refer to a minimal form of cognition.⁸⁵

This in a few words the basic condition shared by all organisms.

The primary motivation provides direction to all what is alive. This is concretized by all means the body provides. For some creatures the whole of the body is involved like with a constrictor, some have special parts like the muzzle of a grazer or a bird using beak and claw, or the front limbs like bears or even better apes and monkeys. As such the first regularity, the first pattern is this fundamental drive incarnated by the form and the capabilities of the body.

The second pattern

Comparative primate foundations and the emergence of a new dynamic

Our inquiry naturally turns to the species most akin to us. Great apes, employing a quadrupedal knuckle-walking gait, maintain a diagonal posture that orients their gaze toward a proximate zone of the forest floor. Their forelimbs, evolutionarily refined for arboreal brachiating and grasping branches, are equally adept at manual foraging and infant care. Instances of tool use, such as employing a hammer stone and anvil to crack nuts, are documented. Crucially, this behaviour already exhibits a structured sequence of operations—a serial ordering and a division of functional roles (e.g., stabilizing vs. striking; holding vs. action). This structure appears less a novel cognitive achievement than an emergent property of their anatomical endowment and sensorimotor engagement with the world.

Observations indicate such tool use is typically context-bound, with implements rarely transported over significant distances. This supports the concept of incorporation, as theorized by Köhler: the tool becomes a transient extension of the bodily schema within a specific, immediate task.

But despite these limitations the use of an implement already provides some advantage. In first instance it protects the skin of the palm and secondly the hammer nodule augments the mass and by this the striking force. Furthermore throwing stones or holding off a danger using a stick increases the range in space, the same for using a twig as a ant fishing rod. It also increases the type of food as in the example of the nuts.

This operational mode is characterized by a direct, situated entanglement. Behaviour is tightly coupled to the present locale and stimulus, lacking evidence for decoupled reflection or abstract problem-solving. While implements afford new functional

⁸⁵ Lyon, P. 2005. The biogenic approach to cognition. *Cognitive process*. Van Duijn, Keijzer & Franken. 2006. Principles of minimal cognition. *Adaptive Behaviour*. 14:157.

possibilities, they do not fundamentally alter the underlying organization of behaviour. The dynamic remains one of embodied, opportunistic engagement.

Change as third pattern, a qualitative shift

So far not one single species shows a spectacular qualitative leap.

Big cats still kill the way they did, grazing animals continue their activity as always and so on. Only those branches of species which in the end will bring forth the human testify of a particular evolutionary parcours. The last common ancestor lived in the canopy and spent also time on the forest floor. Doing that he made use of all fours, the front limbs in a knuckle walking position, the wrist locked to provide the strength needed. Some groups remained longer on the bottom and gradually developed a bipedal posture and gait. The front limbs lost the supporting function but they were nevertheless already skilled in other functions. The hands for instance were proficient in grasping fruit and holding an infant and some apes were even skilled in the manipulation of action supporting implements. These skills "suddenly" found themselves in an open space. Exploring and exploiting the mentioned skills further seems a natural development. Anyway whatever the speculation on this matter, the tools unearthed by anthropologists testify of an improvement. But all in all this development shows improvement in the sense of becoming better in practice but it does not show yet a radical change. A chimpanzee breaking the shell of a nut with a hammer and anvil is already remarkable but this did not open the gateway into a complete new way of negotiating the Umwelt.

Taking the contemporary cognitive capabilities of the human into account there must have been something else going on.

The stone tools found provide actually hard evidence for radical changes. Take the Acheul hand axe. The character of older tools of the Lomekwi and Oldowan type can be discussed, but the apparent standardized teardrop form of an Acheul no longer.

Reconfiguring the sensorimotor nexus: affordance, not teleology

What changed? The shift to erect posture is not merely locomotory; it reconfigures the fundamental sensorimotor nexus. The visual field transforms from a restricted, downward focus to a broad, panoramic horizon. Freed hands, already skilled, now operate within this expanded visual purview, attracting focal attention that is itself newly oriented. This must be understood not teleological—as if evolution aimed toward a preordained cognitive climax—but ecologically. A novel suite of affordances emerged: a world of contours, and fractures that "invited" more complex

manipulation, while a stable visual platform allowed for more sustained appraisal and comparison.

Observe in this framework, manual manipulation is not secondary to vision but is its co-equal partner in a dialectical process. The modern, often cognitivist bias privileges a "see-think-act" sequence.⁸⁶

A more embodied perspective recognizes that reaching, grasping, and manipulating are primary modes of knowing; vision often follows and guides the hand, in a continuous feedback loop. To separate "visual processing" from "motor output" is to succumb to a mechanistic, Western analytic habit. In the ecological reality of an evolving hominin, looking and handling were—and are—dimensions of a single, integrated engaged movement. The cognitive breakthrough implied by the handaxe may reside not in a new "grammar" sequestered in the brain, but in the emergence of a more fluid and potent coupling between eye, hand, mind, and a material world increasingly seen as a landscape of potential forms to be released. The tool is not just a product of cognition; it is a participant in its very constitution.

The recalibration of perception: from incorporation to object-precursors

The intensification of the circular sensorimotor engagement—the sustained focus of the hand-eye system upon its own productive operations—initiates a profound, gradual recalibration of perceptual cognition. The perceptual system is not a passive receiver but an active organizer, and its organizational principles are shaped by what it is routinely tasked with doing. As manual manipulation becomes a dominant mode of engagement, attention is increasingly drawn to specific, task-relevant features of the material world. The enormous window of time should be taken into account.⁸⁷

The following analogy is not exactly what is meant but it provides a hint.

Take a Westerner who never left his village suddenly finding himself in a Chinese environment. He is familiar with the type of writing based on the Greek alphabet but what he now finds represents to him no more than a mess of thin lines and dashes absolutely devoid of meaning. After a while he is getting used to some of the ideograms, becoming able to decipher particular patterns and attaching meaning to it. In the end he will become able to read the meaning in a direct manner that is,

⁸⁶ The research into the workings of mirror neurons support this approach.

⁸⁷ The enormous window of time has to be considered. Between Lomekwi and Oldowan there is about 700.000 years, between Oldowan and Acheul from 800.000 to 1.000.000 years. So the development sketched out here spreads over many generations.

without the need to study the particular ordering of the signs. He will “see” the meaning.

It makes clear the trivial fact that meaning is not embedded in the sign itself. That is what it is: a configuration of dashes and lines. What changed is the process of interpretation applied by the visitor.

In the phylogenetic case, however, the “meaning” being developed is not linguistic or symbolic, but pragmatic and formal. The eye becomes attuned not to semantic content, but to properties like edge acuity, mass distribution, symmetry, balance, and potential for fracture—properties that signal functional affordance. The “meaning” of a conchoidal fracture becomes its potential as a cutting edge; the “meaning” of a symmetrical form becomes its balanced handiness for throwing or scraping. Perception becomes prospective tuned: it scans the environment for “what affords what.”

This changes the very act of looking. The implement, once a transient, incorporated extension of the body schema in a specific task (à la Köhler), begins to stand apart. It transitions from being a component of an action to being a persistent form that solicits a type of action. It becomes a “fore-grounded” configuration, recognized not by a checklist of abstract features, but by a felt sense of “grip-ability” or “strike-ability.” This process is circular and self-reinforcing: the search for functional characteristics (like a sculptor seeking grain) sharpens the perception of those very characteristics, and the resulting forms, in turn, further educate and refine the perceptual system.

The Umwelt thus begins a fundamental transformation. It is no longer a phenomenal scene organized primarily by innate releasing mechanisms or immediate biological motivations (food, threat, mate). It increasingly becomes a field of potential manipulations, a landscape organized according to a logic of utility and form. This marks the nascent emergence of what we might call an object-precursor—an entity perceived not just as a stimulus or an affordance-laden thing-in-a-situation, but as a discrete, persistent configuration with stable, reusable properties.

Two foundational implications

This analysis underscores two critical, interrelated points that challenge a cognitivist, “disembodied choice” model of early hominin cognition:

1. The primacy of motivated, embodied logic:

The cognitive space from which action emerges is not a neutral, contemplative void. It is always already structured by a primary biological motivation (e.g., procure

food, modify shelter) and, crucially, by the sensorimotor logic of manual operation itself. The "decision" to act is not a free-floating intellectual choice but arises from within this embodied, motivated framework. The logic of the hand—of leverage, percussion, and grasp—becomes the unconscious grammar of possibility. There is no "neutral observer" stage; cognition is action-oriented from its foundation.

2. The re-organization of the perceived world:

Concomitantly, visual perception is recalibrated to serve this embodied logic. The environment is parsed and organized into a "meaningful scene" not by abstract geometry, but by manipulable salience.⁸⁸ Perceptual categories begin to coalesce around functional form: "things that cut," "things that pound," "things that contain." This represents a significant specialization of Umwelt negotiation and a genuine moment of radical difference from the perceptuo-motor worlds of other apes by this transcending their cognitive abilities.

The following "fourth stage" is actually running ahead on a later step. It has been left in place to keep the integrity of the text.

Stage four: taking off to another level altogether

From functional implement to substituting stimulus: the genesis of referential experience

The profound intertwinement of hand and eye reconfigured not only perceptual input but also the semantic charge of entities within the environment. Initially, the meaning of an action-supporting implement remained tightly bound to its immediate, direct use within a framework of primary motivation. Its relevance was unequivocal: a hammer stone's function was to crush coverings to access nutrition. This is a logic of embodied pragmatics.

A critical transformation occurs, however, when such a clearly demarcated, isolated tool-object is involved in a singular, high-salience event—for instance, being used to kill a predator. This event enrobes the tool with a secondary, associative meaning. The tool is no longer merely a functional extension of the body (incorporated) nor simply a type of object defined by its form. It has become a unique token, indelibly linked to a specific episode of intense experience.

⁸⁸ "Meaningful" should rather come replaced by relevance as meaning refers to the use of means in a particular sense. See further when displacement becomes discussed. But with this correction in the background, meaningful will do here.

This sets the stage for a cognitive leap. The physical presence of the tool—now a distinct, persistent entity—can for a witness of the original event serve as a substituting stimulus. Its sight or touch provokes a vivid reminiscence of the dreadful episode. The tool has thereby acquired a referential function; it stands for, or points to, an experience that is not physically present.

Two issues are of importance - the emergence of intentional reference and displacement

This catalyzes two interdependent developments of profound significance:

1. The discovery of self-initiated experience provocation:

The actor who manipulates an object and thereby triggers a powerful associative experience in another (or even in oneself, upon later encountering the object) encounters a new possibility: experience can be intentionally provoked. While many environmental stimuli are inherently evocative, the key novelty lies in the self-initiated, agentive nature of this provocation. Once discovered, this capacity functions as a powerful, unexpected reward, driving its repetition and refinement through basic reinforcement mechanisms. Crucially, this does not require reflective, meta-cognitive thought. It operates at the level of behavioural learning. Yet, within this process, a nascent form of intention is ignited—not merely the intention to achieve a physical result (crack a nut), but the intention to elicit a specific experiential state in a social other (or in one's own memory).⁸⁹

2. The foundation of displacement and mental modelling:

Combined with the content of the effect—that is, its power to reference something absent—this capacity begins to free cognition from the "here and now." The tool-as-stimulus triggers an experience displaced in time (the past event) and potentially in space (the location of the event). This establishes the foundational practice of experiential displacement. It is a pragmatic, non-symbolic precursor to true symbolic reference. From this seed grows the more advanced ability to deliberately use objects, gestures, or later, sounds, to evoke such displaced experiences—first as reminders, then as communications, and ultimately as the building blocks for modeling. The capacity to "re-run" past events or "pre-run" potential future scenarios in the imagination, a cornerstone of planning and narrative, finds its evolutionary roots in this self-reinforcing loop of associative objects, agentive action, and socially shared experience.

⁸⁹ This, I presume would be of major interest to Tomasello for whom intention is a cardinal factor.

It even takes a bizarre form when in imagination fired up by making use of external cues, he provokes an image of himself or of a feature of himself or of an event in which he got involved. At this point reflection understood as considering upon, becomes reflexion or considering upon oneself. It is bizarre indeed because the organism manifestly being one and in principle undividable seems to break up in an active observer and a passive observed installing a feeling of distance which actually is not present. It is a certain perspective, an appreciation which Sartre strikingly coins as “cette distance nulle”, the distance which is (getting experienced but) not actually occurring.

The ability to realize a displacement in time and space, if only in imagination opens a plethora of new applications, a complete new order of interventions onto the world which on top of that suddenly increased in scale in an exponential way.

At this point the human species realizes types of negotiation leaving all other species far behind.

Summarizing

1. At first the behaviour of the hominin line which is of interest in this discussion provides no indication yet of a cognitive condition differing from other species.
2. Taking an erect posture and a bipedal gate provides the onset for a new perspective on the environment. It frees the hands from a supporting function in the locomotion and by this opens the ability to improve skills already present. But again this second stage does not show a qualitative rupture.⁹⁰
3. In the third phase a circular dynamic of hand and eye results in a reinterpretation of the environment. A shift occurs from a purely primary motivated perception in the direction of an increasing attention for action supporting implements in first instance in the form of particular and concrete instruments, later a reinterpretation of everything perceivable in function of manipulation and in the end as a general perceptive cognitive pattern or a concept which is getting imposed. At this point a clear difference becomes apparent and this provides the first moment in which a radical change shows. This covers the objectification hypothesis referred to in The Forgotten Transition.
4. Association provides the instrument with a secondary meaning. It opens for the actor the ability to initiate and apply to himself experiences with a content of imaginative nature. Manipulation of the implement results into manipulation of the mentioned content. With this the capabilities of the species take a step of

⁹⁰ For some detail, Shumaker et al. (2011) point out that chimpanzees and bonobos do not introduce tools to make tools, they do not make tools in a cooperative setting, they do not bring forth complex tools and the power is provided by the energy of the animal and by the mass of the implement.

exponential magnitude. The cognitive abilities of the species most akin are left behind in a definite way.

This might introduce the idea of a world fully transparent and open for all possible interventions. However all this is unavoidably based on the scheme of action in which tangible means are involved.

Reducing the previous to the core of what rightfully might be considered the revolution:

1. The introduction of the object as perceptive cognitive concept rising from and always embedded in the context of mediated manipulation.
2. Given the circumstances inevitably it had to be followed by the ability to initiate displacement in the imagination opening the floodgates to new possibilities and a new be it imaginative realm of experience.

Remarkably the human experiences a gap, an abyss even in relation to other organisms. However, biologically man is not radically different from the last common ancestors. Leaky's quote that man is the fifth ape – doing things differently might be taken literally.

Rounding up, the article by Stout & Chaminade refers to a grammar of action to be understood as a series of discrete operations when stone knapping but it also promised to relate this to general intelligence, in short a bottom-up approach. It did not meet that end.

The alternative presented addressed the problem the other way around. The attention got focussed on a larger level incorporating the fashioning of nodules into stone tools without an analysis of the operations in detail, a top down approach.⁹¹

On grammar: a necessary divergence into language

While the preceding discussion has framed “grammar” as the system for navigating Umwelt perturbations, the term instinctively evokes its linguistic context. In deference to reader expectations—though this constitutes a deliberate, parenthetical shift from the established argument—a brief examination of grammar in language is warranted. This will serve to clarify conceptual boundaries and pre-empt anthropomorphic interpretations.

⁹¹ In accordance to academic practice, I could have added footnotes in abundance. I preferred not to do so and only to introduce a note when it enriched the information offered.

A primary clarification concerns the common understanding of the term “language”. In mainstream appreciation it denotes a complex, uniquely human capacity encompassing a cognitive faculty, a social tool for meaning-transfer, and a structured system. Crucially, human language is defined by communicative intention—the deliberate use of secondary stimuli to shape informational states in both self and others. Contra anthropomorphic readings, animal behaviour, such as vervet monkey alarm calls, are not referential in this sense; they are often expressive by-products that trigger conditioned, adaptive responses in conspecifics, a process better explained by behaviourist paradigms than by attributed intentionality.^{92/93}

Within this intentional framework, one can distinguish three systemic modes: first, a general system of mediated manipulation; second, that system applied to the specific manipulation of discrete units (secondary stimuli); and third, local variations upon the second (e.g., syntactic orders, morphological strategies). It is at this second level that core “grammatical” operations emerge, which are fundamentally extensions of concrete manual action.

The foundational operation is perceptual objectification: the perceptive cognitive parsing of experience into discrete units complementing the formal characteristics of the hands. This is a *sine qua non* for language; without discrete entities like words or phonemes to serve as manipulable secondary stimuli, the skill we call language could not exist.

Upon these units, basic physical-operational logics apply:

1. Concatenation: The serial ordering of discrete units.
2. Merging: A specific form of concatenation requiring a particular order, akin to the core syntactic operation of Merge.⁹⁴
3. Recursion: The embedding of structures within like structures (e.g., subordinate clauses), metaphorically “boxes within boxes.”⁹⁵

These operations—objectification, the object embedded in manipulation, concatenation, merging and recursion—constitute a sufficient toolkit for generating

⁹² Tomasello, M. 2003. *Constructing a language*. Harvard University Press. P. 10. For a more extensive discussion on the so called communication of animals reference to Gilbert, J. 2018. *The Forgotten Transition*. p. 165/6.

⁹³ The absence of a declarative move i.e. the transference of information about some instance does not imply that animals are in a state of emptiness. On the contrary their condition is one of an incessant tension of relation regulation (predators or prey, out-group conspecifics, territory defending, males/females, alpha’s vs. lower on the hierarchical ladder etc.)

⁹⁴ See Chomsky’s Minimalist Program explained in his eponymous publication dating from 1995.

⁹⁵ As in “The maid, *who seems naturally to be clumsy*, broke the precious vase”

and ordering content in the experience, commonly coined propositional (phrases, sentences and from another point of view ‘thoughts’). They form the necessary, basic instrumentation, likely foundational even to protolanguage.

A common objection is that such mechanics seem overly simplistic to generate linguistic complexity. However, this impression often stems from a tendency in linguistic theory to abstract these operations into purely mental, intangible domains (e.g., Saussure’s *langue* in contrast to *parole*). In the present action-based framework, they are understood as physically-grounded processes. Even a claimed absence of recursion, as argued by Everett for Pirahã, can be re-analyzed by recognizing the speaking agent as the embodied “holder” in which any utterance is intrinsically embedded.

The apparent complexity of mature languages arises not from these core operations, but from their subsequent enrichment through *projection*: image schemas, metaphor, and metonymy. To employ an analogy: the core operations are the wheels, engine, and chassis of a car—essential for locomotion. Projective processes are the bodywork and interior detailing—adding sophistication and range, but dependent on the underlying functional substrate.

This excursus has, of necessity, been brief. Its aim is to sketch how a “grammar of action” might be discerned within a linguistic context, grounding ostensibly abstract cognitive patterns in the tangible logic of mediated manipulation.

3. The object an early insight

The psychological study of perception brings to light that in the visual mode a condition of alertness is raised by movement in the visual field. This coincides with the fact that neural tissue only is present in moving organisms. The tube sea squirt (*Ciona intestinalis*) offers an excellent illustration. In its initial state as larvae, it has a rudimentary nerve centre. But once a suitable spot to stay found, it digests this neural knot. This makes the specific function of a brain clear, all be it in this case a very simple specimen⁹⁶.

⁹⁶ Trivers (2002) pointing out that natural and sexual selection is not aimed at realizing a brain capable of true (corresponding) knowledge, has been referred to earlier. He stresses that the only biological function of the brain is to sustain the fitness of the organism in order to be able to successfully transfer its genes. Also Vaihinger expresses a similar point of view.

Movement as a discriminating factor is very powerful. Large objects or even living creatures as far as they stay immobile do in most cases not get noticed, a phenomenon well known to hunters and wildlife spotters.⁹⁷ Under these circumstances any moving item will acquire foreground value whereas stationary configurations vanish into the diffuse background⁹⁸.

The perception of an item with object characteristics⁹⁹ is different compared to that of an event. An object as a clear delimited entity acquires a certain degree of salience. It takes position in the focus of attention. At this instance the cognitive scheme in the act of organizing a concept, puts together parts into a certain form and so plays the determining role instead of the movement in the case of events. The object is “there”, standing tall, detached from but still present in the context. It is present in front of the observer in a very special way. The observer seems to be able to move around it with all the other stuff being present rather diffuse in the background. As manipulator he seems to be able to topple the object in all directions. With all this in one and the same act, geometric three-dimensionality gets introduced as an alternative for the force field in which the organism is fully engaged. This is yet another cognitive organisational characteristic. Space unfolds itself along the lines of that geometrical dimension with the object present in a coordinational location.

The manipulated object provokes even more. In a semantic tension it calls for the other instance in the manipulation, the manipulating and experiencing subject. And

⁹⁷ In a well known experimental setting people were confronted with an airplane of which one motor was missing. For most it went unnoticed.

⁹⁸ Rensink (2000) mentions the limited character of the visual focus and at the same time to different forms of blindness of which his comments, that they are common rather than exceptional.

⁹⁹ The following gives an idea of how an object is getting thought of. Nisbett in comparing Eastern and Western thought observes the following remarkable position sounding familiar but referring to the history of thought and not to the introduction of a stable configuration of input in the frame or anthropogenesis “(...) more basic to Greek philosophy is its background scheme, which regarded the object in isolation as the proper focus of attention and analysis.” (2003:10)

Jumping to more recent times John Stuart Mill in his psychological theory of belief in externality takes an object as a permanent possibility of sensation – what I would call a stable configuration. For Berkeley knowledge of material objects is ideal (an idea as a product of the mind) not real.

For Kant an object is any thing which is conditioned – which is brought into condition thus – by the subjects representation and so capable of being known. As the thing in itself cannot be known it cannot take the form of an object. Categories of the mind are necessary for the experience of spatio-temporal objects.

A contemporary researcher in the field of perception Ian E. Gordon concludes “(...) in characterizing a real object as a stimulus we do not refer to an absolute property, in and by itself but only to the objects relationships to a living organism” (2004:23). It will be clear that the literature on the subject is vast. What is getting mentioned serves only as a hint.

a step further still, the manipulating subject taking himself to object of contemplation and manipulation¹⁰⁰.

In summary the characteristics of “the object” are:

- it shows itself as a distinctive entity prominent against the background; this is opposed to the figure with fuzzy borders merging into the gradually diffusing background characteristic for an event;
- in relation to the object distance and detachment is taking form in the experience of the observer-actor as opposed to the character of structured coupling and the being absorbed into the event;
- with this attitude of distance taking the character of direct engagement in the event is getting transformed into an orientation of the observer-actor onto the object;
- this taking of distance implies a rupture or decoupling providing the necessary condition for the opportunity to make a choice whether or not to act, contrary to being rather blindly restrained into the direct engagement.

This is all together a very different organized perception than the one in which events play the exclusive role.

But whatever the organization of the content, any perception¹⁰¹ affects profoundly the relationship of the organism to the perceived context or Umwelt. This is particularly so for basic categories and concepts such as “event” and “object”.

What is of special importance is the fact that observations of “events” and “objects” do not bring to light natural items, units existing in the natural order in that particular form. An “object” as a basic categorizing scheme is a cognitive construct embedded in the reorganisation of the perception which accompanied or followed from the evolving handling of means (tools). In one sentence an object is the name given to a concept which got form during a particular period in the development leading to the modern human.

¹⁰⁰ A same kind of objectivation can be observed in the treatment of fire. Every organism is instinctively forced to retreat from it but the homo-erectus which apparently became capable to overcome that strong instinct and started to treat fire the same way it would treat an object: detached. Science (29.4.2004) refers to locations where indications of controlled use of fire can be found. It goes as far as 790.000 years back. The least controversial finding is situated in Amata on the French Riviera and is dated at 300.000 years. However, of importance here is that the mastering of fire followed the introduction of flint knapping and fits the same approach of decoupling and detachment. The force of the instinct seems to have been overcome in the same way the incorporation of a tool seems to have been left behind.

¹⁰¹ Perception meaning interpreted observations.

But the fact that the literature only refers to “object” cannot be overlooked.

Take Schneider G.E. for instance, who in Science 163 dating from 1969, reports that descriptions allowing identification of objects are being processed in another neural location than the description guiding the hand into a grasping form fitting the object in question. Ungerleider L.G. and Mishkin M. in “Analysis of visual behaviour” (1982) provide more accurate information on the exact neural pathways involved. Here too the description “object’s qualities” is being used. Goodale M.A. and Milner A.D. in turn deepen the research of which the results become published in 1992. They maintain the same terminology. But Kravitz et al. in a publication dating from 2013 opt for a different formulation. In a separate text box discussing the general functions of both neural pathways they clarify that “The key aspect of the ventral pathway representations is not that they are tied to particular physical objects, but that they capture *a stable configuration of visual information* (e.g. texture, scenes).” (stress added)

The question arises why Schneider and the other authors apart from Kravitz et al. maintain making reference to objects? Has the research they performed indeed shown that the visual stimuli evidently point in the direction of things called objects? Or did they without questioning adopt a tacitly shared conception? The articles point into the direction of the latter possibility. For these authors objects seem to be elements present in nature.

The term “object” however belongs to the same family as “event, condition and process”. They all refer to categories by virtue of a particular feature. What precisely that feature might be in the case discussed here is made clear by Kravitz et al. “a stable configuration of visual information”.

However “object” and “event” are already comprehensive categories, what Kravitz et al. refer to goes even further, more precisely it encompasses visual input testifying of a stable configuration¹⁰². In other words this is about the coherence of elements constituting a figure. An event how dynamical it might be remains to be the same event in virtue of this coherence. In the same way an object remains to be the same object in spite of the different perspectives (Abschattungen) in relation to the movements of the eyes, the changing position of the head and the body. Coherence is the keyword^{103/104}.

¹⁰² This could be called a formal basic level category in contrast to the event and the object configurations which in contrast to the former could be referred to as subordinate categories characterized by a semantic payload.

¹⁰³ See also Hummel, 2000.

The reason why different elements con-figure, that is make one figure, is a theme of central importance in this volume. Primary motives forge elements from the chaotic input to a relevant event. The functional reorientation of the hands after the hominid became fully bipedal configures the input of what will be “ready at hand” - in the sense of Gibson’s affordance or Heidegger’s *zu händenheit* - into the concept of an object.

The importance of the reformulation made by Kravitz et al. is obvious. Objects considered to pertain to the natural order and in that condition providing the very first step for further reasoning, a conception generally shared, exclude the more general or overarching “stable configuration”. But precisely the latter is giving room to the suggestion of an evolutionary transition from a perceptive cognitive event configuration into the direction of an object configuration, an idea which will be defended in this volume.

4. The object, the definition refined

- initial approach
- the closing approach
- definition of “object” & stable configurations in animal perception
- objectification, three flavours
- Object, what’s in a name

1. After years of scrutinizing relevant publications the insight dawned that the perceptual organisation of the Umwelt experienced by humans differs drastically from other animals. It made me consider both as opposite. Animals engaged in a event like scene ordered by dynamic Gestalt principles while humans felt confronted with a stable set of manipulable units present in front of them. This point of view allowed distinguishing the characteristics of both positions.

2. It became however clear that the Gestalt ordering principles which I so far considered to be exclusively active in the event domain of animals, remained active too in the domain of the human perception of the Umwelt. It led to the insight that the Gestalt principles took a primordial role in any possible condition human or non

¹⁰⁴ This is a very different approach than for instance Latour (1996) and Tylén and McGraw (Gallotti et al.2014, chapter 10) take. Kravitz focusses on the coming into being of the concept, while the authors mentioned elaborated on the coming into being of meaning of objects in a particular functional context.

human, but that in the hominin line the new development around the skilled application of the hands changed characteristics of the scene perceived.

Prior version: What is of relevance takes the foreground in the perspective of the animal; humans on the other hand got confronted with a set of manipulable items in front of them. Both conditions were very different.

The actual version: What is of relevance takes the foreground and follows primordially the rules described by Gestalt psychology. However the importance of the role of the freed hands becoming ever more skilled in manipulation draws the visual attention to formal characteristics favourable for the execution of that practice.¹⁰⁵ In a first phase of development it will be related to concrete and individual elements, i.e. a particular nodule after a while shifting in the direction of that particular type of nodules; in the end becoming sensible for formal characteristics like mass, weight, texture, rim etc. by this constituting a formal or abstract pattern. This got generalized and projected onto every occurrence in the vicinity. While for the non human animal, the meaning of the environment only comes determined by the condition of the primary motives in relation to the abilities provided by the body, for the human an extra perspective came into play, moreover takes a dominant role. For the non human animal the basic dynamic was about the regulation of the relation to what happened around, for the human that question became rephrased in “how can it be handled” (stress on “hand”).

What would fit the constraint of that pattern would in the end become recognized and coined “object”.

At this point some remarks are in order.

First of all the later attributed denotation of “object” comes from the scholastic Latin “objectum” meaning: thrown in front of, placed in front of, con-fronting... in turn going back on the Greek “antikeimenon” or to lie opposite, oppose, withstand, repel.

Secondly an object is commonly thought as something isolated and standing on itself, detached from any influence which might occur. It however obtains meaning from a very particular context. It refers to the set of characteristics favourable for manipulation. Thinking of it in isolation is not doing it justice. It always is a function of manipulation, in perception and motor approach a construct following from it. It is inextricably bound to it. Manipulation provokes the instance called object.

Definition: The term object is not a neutral denotation. It originated in the context of thorough developed manipulation and since then perceptually projected onto -

¹⁰⁵ Sommerville et al. (2005) observe that changes in manual skill affect attention. (Sommerville, Woodward & Needham. 2005. Action experience alters 3-month-old infants' perception of others' actions. *Cognition* 96, 1-11.

defined the world as a set of manipulable entities. It implies that the meaning of the term always should be understood against a context of manipulation, the latter not as an abstract concept but directly related to the negotiating organism, in particular the abilities, direct as well as projected, of the hands.¹⁰⁶

Thirdly, we are used to understanding terms as if they were no more than neutral denotations. One speaks of humans, minds, souls... as if it were natural kinds, elements existing in the world devoid of historic colouring, of semantic framing. Taken this way there are objects in the same sense as there is air to breathe. But the question might be raised: do rhinoceros experience objects in their Umwelt, do earthworms do..?

This wants to stress that terms are used as if referring to something natural while at the same time neglecting or even being blind that its meaning is embedded in a particular biologic and historic setting.

3. The proposition that non-human animals may not experience "objects" within their Umwelt is often met with profound skepticism, a reaction for which the German language offers the apt term *Glaubensunwilligkeit* — a refusal to even entertain the notion. Are objects not self-evident, natural kinds inherent to the world? This intuitive conviction, however, conflates a human cognitive construct with a universal given.

This is not to claim their perception is chaotic or devoid of stability. On the contrary, recurrent, salient events consolidate into stable perceptual configurations—Gestalt figures of behavioral significance. A cat does not perform a fresh deductive analysis each time it encounters a mouse. Repeated, motivationally significant confrontations (resulting in a successful hunt and meal) solidify a coherent neural pattern, adding a recognizable "mouse-schema" to its behavioral repertoire. These are stable, meaningful percepts, but they remain embedded within an action-perception cycle of pursuit and capture. They are not yet "objects"—discrete, persistent entities defined by a suite of manipulable properties that exist independently of the immediate motivational context.

Thus, the answer to the question is both yes and no. Non-human animals undoubtedly operate within worlds populated by stable, recognizable patterns that guide adaptive behavior. Yet, these patterns do not take the ontological form of

¹⁰⁶ Ref. "Hand and imagination" chapter 16 in *The 5th ape*. Compare to perception according to Merleau-Ponty "embodied activity in which we move to get an optimal grip on things"; I would add "in that we construct the concept of object as that what is affordant to manipulation". For the quote attributed to M.P.: Hubert Dreyfus in the interview with BrianMcgee (1987), Youtube.

objects. The object is a later evolutionary achievement, a cognitive artifact born from the hand's dialogue with matter, which carves out from the flow of experience discrete, potentially tool-like entities that "stand apart" as units of potential use.

Objectification, three flavours

1. The coming into being of a template on the basis of the features affordant in relation to the abilities of the hands.
2. Recognizing of the said template in the visual field – interpretation of the world as a set of object.
3. Bringing forth artefacts satisfying the mentioned features (1)

Object, what's in a name

It is remarkable that in the 14th century "object" still got understood in the sense of that what got thrown in front of or confronted with. This begs the question what caused the turning into a new rather neutral or natural indication. The only element coming to mind is that in the 16th century the Aristotelian way of defining something according to its essential features gradually made place for the approach as introduced by Galileo to describe entities by the whole of their measurements. That indeed left a quite neutral description devoid of a particular meaning. It is the stage by Lorraine Daston coined as mechanical objectivity in contrast to truth to nature as the previous mode.¹⁰⁷

This makes clear that actually two types of definition are involved. In the first place there is the commonly known and accepted stipulative definition as listed in dictionaries. It more than often gives the impression of being neutral without any sign of background significance. The effort to produce a neutral definition stems from the scientific paradigm wanting to get rid of any type of contamination. Meaning is however in most cases raised from a particular historical setting and in some cases even against the background of evolution. In that sense "object" is as mentioned not a neutral denotation at all. It can only rightfully be understood from within the context it originated: the manipulation and adaptation of action supporting implements. As a matter of fact, it should always be understood from that angle.

A so called neutral understanding of "object" only veils that.

¹⁰⁷ Daston, L. & Galison, P. 2007. *Objectivity*. New-York: Zone Books.

On aboutness

Thus far, the focus has remained almost exclusively on features compatible with the form and capacities of the hands, thereby giving rise to discrete units later termed objects. This shift, however, constitutes a complex maneuver in which several processes converge. It entails an active search for the aforementioned features, implying both a perceptual distancing within the visual field and a concurrent evaluation of the characteristics being sought. Consequently, objectification is inherently accompanied by aboutness; these are not two distinct phenomena but rather integrated aspects of a single cognitive operation.

Rounding up

The initial condition shared with other animals provided the necessary stepping stone. It was followed by the first diverting development, the reorganization of the Umwelt into a scene of manipulable units i.e. objects going with a stance of distance and consideration or what today is known as aboutness. It is time now to focus on the further development i.e. the incidental discovery of the ability to provoke content in the experience by making use of tools.

It will consist of two parts, adapted and extended existing contributions. This will inevitably imply some overlap but both texts shed light on this step from different angles. The first part is rather introductory offering an easy stepping stone into the second contribution which discusses things more in depth. The impatient reader can always skip the first part.

2 Narration – a technical perspective

Storytelling, setting the human apart

“Of interest is not particularly the character of things in themselves but the interpretations about it”

Paraphrasing Epictetus (50-130 CE)

1. The focus on semantics, why?
 - 1.1. The shared condition
 - 1.2. The transition
2. And now the problem
 - 2.1. Nuances
 - 2.2 Omnipresence
 - 2.3 The character of a transition
3. Full semantics
4. Minimal semantics
5. The necessity of a storyline
6. The relation to minimal semantics
7. A final quote

Abstract

The human experience seems a never ending narrative. Whatever said or thought it takes the form of a report or storyline. Even formal expressions like logic or chemical formulas do not escape that condition. They are narratives under restrictive conditions.

Narration seems a defining feature of the human, enough reason to take a closer look at some characteristics. As it comes down to bringing forth a story rather than offering a one on one depiction, the burning question sounds why should it be taken serious after all? Further: are all stories of the same type and if not in what do these differ?

This contribution wants to offer some reflections on this intriguing subject.

1. The focus on semantics, why?

1.1. The shared condition

“It is only our natural prejudice, and that arrogance which made our forefathers declare that they were descended from demi-gods, which leads us to demur to this conclusion.”

Darwin, The descent...

(1871/2009, Cambridge - paperback, vol.1. chapter 1; p.32)

However most people accept the theory of evolution proposed by Darwin, few seem fully aware of its ultimate implications. When discussing the theory mentioned, the focus is mainly on heredity, on correspondences on the level of the genome, anatomy, physiology and on behaviour in the sense that behaviour and heuristics between species are getting compared. Rarely if ever the conclusion is getting drawn that the close kinship to other great apes implies that “both”¹⁰⁸ shared a similar understanding of the environment.

In order to finally be able to offer an insight in what changed, it is desirable to get some understanding of that shared or initial condition.

What is the core of that condition?¹⁰⁹

There are at least two issues which need to be explained.

Firstly, experience is at the core of existing; it is first line. It collapses with it, it is synonymous to it. It could be argued that one is also able to think of experience and in that case thinking comes first. This clever mind ignores that thinking is a mode of existence.

The stress on the fact that experience is in an absolute sense first condition will become clear further.

The second principle is about the determinants of behaviour. Nowadays the focus is on the workings of causes hidden deep in the person. Behaviour is often explained by referring to hormonal swings or shortfalls respectively abundance of neurotransmitters and the like. But whatever the effects of deeper situated factors, even if these are decisive for the way the individual understands the world, it is actually the understanding of the world itself which will determine the type of

¹⁰⁸ “Both” only serves the rhetoric. The ancestors which eventually would evolve into the human species were part of the great apes.

¹⁰⁹ This has been discussed extensively in other texts such as “The Forgotten Transition” (2018); Building cognition, objectification as linchpin; Beyond the Material Engagement theory; chapters 1 & 2 in the supplement of The forgotten transition etc. The latter contains an inventory of about forty differences.

behaviour. Whatever the causes contributing an understanding of the scene experienced as friendly, it will be that experience itself which will raise behaviour accordingly.

Take an animal and for the sake of being able to raise empathy take a mammal, it will not be pondering the condition of the world, but is in first instance experiencing the fluctuations in the environment in a direct way. It will respond to it on the basis of its “understanding”. Approaching an animal will often result in the animal to withdraw as it will take it as threatening.

In short being alive is equal to a condition of experiencing and that will become coloured by the way the world is understood. So far for the most fundamental condition, what are the characteristics of this?¹¹⁰

Here I will only mention a few, restricted to the most central.

The experience is centric, better still egocentric. It is what is often called the “*umbellicus mundi*”, the navel of the world which collapses with what is experienced. It is at the centre of the experience and the experience equals the world. It is primary motivated, meaning providing the drive to act in relation to the fluctuations experienced as relevant. The primary motivation being one dimension in evaluating what is relevant, the other follows from the abilities of the body. The experience is fully dynamic, a constant flux. However the term “consideration” is not appropriate even completely alien in this condition, the comment that in this condition consideration is absent makes it more easy to grasp it. It is iconic in nature. Again not appropriate but adding that there is absolutely no commenting and declaring language facilitates empathy. Iconic should not be understood only in the sense of visual. It refers to an “image of the world” brought forth by a confluence of all sensory channels resulting in one compact image. Absence of the stance of consideration and of act of commenting implies a condition of directness. What is relevant will in the experience take foreground while all other details vanish into the background. Important is to realise that this experience of being a world rather than to have a world is taking a here and now dimension, it is bound to the local and the actual, moreover it is collapsing with it.

¹¹⁰ This short passage is an example of the overlap mentioned earlier.

The basic – shared – initial condition

CORE	CHARACTERISTICS
Experience raised by the understanding	Centric – egocentric World and experience collapse into one Dynamic Iconic Direct Relevance of stimuli determined by - condition of primary motivation - abilities of the body What is relevant takes foreground

instantiating an or collapsing as a here and now dimension

This depicts in a simplified version the condition the last common ancestors shared. Essential is to understand this thoroughly. In this condition there is no question asked into the meaning or the sense of things happening. What is happening is relevant from the very first moment; what is going on equals making sense. The condition of questioning does absolutely not exist, it does not occur at all. The void provoked or expressed by asking a question is of a very different order altogether. It is not existing in that stage in the same sense a television set did not exist in the Middle Ages and any reference to a contraption like this would absolutely been unthinkable, nonsensical. The same goes for the duality being free versus not being free, of unbound or ungrounded versus bound to the situation at hand. The condition of being free (to make a choice) is a qualification sprouting from a condition which at that time did not exist at all, which in the same way as previous example – the ability to question – could not have been thought. From the point of view of modern man behaviour in that condition could be considered as being determined in a heteronomous way, that is triggered by internal or external stimuli in contrast to autonomy referring to the ability to take initiative oneself. But again these terms are anachronistic. They are projections from a contemporary frame of reference onto an era in which these conditions did not exist at all hence the terminology is in no way appropriate.

A good understanding is necessary of getting to grips with the different condition which will characterize the later (the actual) human.

1.2. The transition

I have taken effort to elaborate on the previous subject because it is essential to raise an understanding on a condition of pure dynamic existence in which the act of reflection or the stance of consideration is absent in an absolute sense.

It is now the right moment to refer to the transition. This has been extensively discussed in other writings¹¹¹ so the following will be extremely brief.

The transition focuses on the shift from a dynamic existence as described in the previous paragraphs in the direction of a particular way of producing tools bringing forth a reorganisation of the perceptive cognitive organisation. In short it results in a perspective on the world as a set of manipulable objects while the underlying dynamic is that of mediated manipulation. This leads to a stage of development which could be coined the technically skilled hominin. This was not only a case of technical proficiency but went with a change in perceptive cognitive perspective. The reconfiguration of input into an object pattern has been mentioned. But the perspective is about the appreciation of what is perceived as being on a distance. The object perceived is appreciated as being over-there, in front of the perceiver, ready at hand. The angle of perception changed with it into a kind of super-vision, a looking upon, a stance of consideration.

All this is one drastic step away from the hominid but it is not a human yet. That stage follows from a further development which – it has to be stressed – is contingent. It happened because the circumstances were favourable for its coming into being but there was no teleological goal forcing it to happen as often suggested.¹¹²

The factor triggering further development can be summarized by the term “displacement”.

I will now elaborate somewhat on this because it provides the stepping stone into the problem at the core of this contribution: the urge to bring forth narratives in the first place, the difference between full and minimal semantics as the real subject.

The dynamic or mechanic

In order to clarify what it is about a passage from “The Forgotten Transition” will be used

“II.1.1.5. Association and displacement

Occurring events result in the organism being aroused and directed towards the centre of the event. By repetition, types of events are becoming associatively coupled with certain types or relevant contents of arousal. This leads to the effect

¹¹¹ The Forgotten Transition (2018); Building cognition: objectification as linchpin; Beyond the Material Engagement Theory; Hand and imagination... to mention some.

¹¹² Not all think that way. Holloway for instance mentions a social need, groups becoming ever larger. But what about Gelada baboons living in groups of at least five hundred individuals, why was a similar need not occurring there?

that a significant detail of an event suffices to activate the global corresponding type of arousal. This is quite a trivial mechanism occurring in many species at least those provided with the same type of neural architecture. Man is no exception.

A special property of an aroused state of that kind is that it does not only bear content value restricted to the event itself. Thus the stimulating detail in the event not only announces the event to come, as for example a certain noise announces a so far invisible predator. In fact it reactivates neural correlates of which the specific configuration acquired form during earlier events of similar type. As such, a state of psychic and motor excitement related to events in the past and probably also in another location, are being brought to life. Therefore the naming of such a reactivated state as 'a remembered present' by Edelman is strikingly accurate.

This makes it evidently clear that the actual reactivated state of the organism is in part related to something falling out of the actual context. As such it realises a **displacement in space and time**.

The same is true for the use of means or tools discussed in previous paragraphs. This use is not a bare or cold functional act. The handling of the tool is immersed in meaning i.e. associations with particular experiences of previous manipulative events. As an extreme example, a hammer stone used in a heraldic fight with an enemy is compromised and as such loaded with meaning¹¹³. The renewed manipulation of that particular tool will always wake some reminiscences of that feat, Edelman's remembered presents.

Associations of that type are not exceptional. They are equally present in the dog seeing the boot which caused him harm in the past. It will result in a state of fear, withdrawal and a furious reaction.

The uniqueness of the human situation lies in the fact that associations of this type can become coupled to means with an "object"-character as previously described in

¹¹³ As a matter of fact, this situation makes part of a second layer of meaning. Any tool is a natural index of its use as Byers (1994) observes. In that sense, a particular type of tool is used in a specific context (hunting and butchering for instance and the preparation of meat for the group meal) composing what could be considered a first-line meaning. But apart of that referred to here are specific events and occasions which are contingent. An unexpected fight in which an enemy was killed for instance adds an extra layer of meaning.

In "Hands and Imagination" the levels of meaning have been dealt with in more detail. It is offered here as a note in the margin not changing the line of thinking of the actual problem at hand. The first level is based on the relevance of some input in relation to the condition of the primary motives. The second – easily overlooked – level is determined by the type and the construction of the body. For the human the position, the abilities and the function of the hands are at the heart of the way the human will approach and understand the world. The third level rises from the tool supporting action, the tool having a dedicated function and task (a sharp rim is for cutting). The fourth level is based on association. Much later in the development two more levels can be discerned. The fifth level is meaning by stipulation (verbally defining) and the sixth is meaning raised by projection (metonymy, metaphor).

the case of the stone tool with the flaked rim. In situations of that kind associations do not only *happen* to the individual. By the detached character of the object the manipulating individual can instigate the associative state himself. Formulated differently, **by use of the mediating object he can provoke the displacement himself** without being fatefully forced to it by the contextual circumstances. At this very point, self-induced imaginativity germinates.

This is not to come understood as voluntary from the very first instance. It could as well have been fired up by the effect experienced as favourable by this provoking repetition in a behaviourist way (reward inciting to a particular action) much later evolving into what is not qualified as voluntarily. In fact, it implies a playful showing – not showing. Importantly, the manipulation of tools in function as 2nd order stimulus is becoming related to an effect in the public arena.¹¹⁴ The qualification voluntary is not referring to some mental magic capacity but an effect of some low level performed action.” (end of excerpt)

This capacity for deliberate, referential choice marks a profound evolutionary turning point. It became possible precisely when the embedded, situated event—where a tool's meaning was bound to a single, immediate action—began to give way to the cognitive scheme of the detached "object." This ontological shift enabled a new mode of engagement with the world, characterized by three interdependent developments:

1. From response to evocation:

A stimulus no longer merely provoked a direct behavioral response. It now also functioned to activate stored episodic information, retrieving memories of previous, affectively charged experiences. Perception gained a historical dimension.

2. The genesis of choice and the substitutive stimulus:

The habitual manipulation of tools created the conditions for this shift. It fostered:

- An ability to make deliberate choices between implements based on anticipated, not just immediate, outcomes.
- The availability of the implement itself as a potential substitutive stimulus—a physical token that could stand in for an absent event or entity.

3. The dawn of displaced experience:

Consequently, an individual gained the nascent ability to intentionally provoke an experience whose content was displaced in space and time. One could, through the presentation of a tool associated with a past event (e.g., a predator kill), evoke the

¹¹⁴ To be taken in the same sense as Vygotsky explaining endophasy as an “interiorization” of prior speech in the open.

memory of that event in another or in oneself, freeing thought from the so far being inevitably bound of the here-and-now.

This is a fact of the utmost evolutionary significance. It represents more than a technical refinement; it is a cognitive watershed. It lifted the technically proficient hominin from a realm of pragmatic, situated intelligence onto a new developmental trajectory. This path led toward becoming "more of a hominina"—a creature whose world is structured not just by affordances for action, but by a web of meanings, memories, and potential narratives, placing it irrevocably on the way to becoming human.

Some noteworthy quotes

- Morford & Goldin Meadow (2001) speak of "displaced reference"
- Gärdenfors (1996) of "detached representation"
- Coolidge et al. "(...) consider the tool showing a permanency in time as the stage on which displaced reference could come into being." (in Bruner, 2015:182)
- Bickerton stresses the value of displacement as in "I am not suggesting that protolanguage, at its birth, had the unlimited capacity for displacement that forms so salient a feature of language. But the emergence, at some specific time and place, of the first signals that did not refer explicitly to the here-and-now would have represented the crossing of a clearly marked frontier rather than a walk through a gradually changing landscape. (Arbib & Bickerton, 2010:170) and further "There is good reason to choose displacement as the first protolinguistic development (171-2)
- Friston (2005) and Friston et al. (2017) the active inference theory
- Bar et al. (2006) discussing predicative processing
- the idea of mental time travel as offered by Tulving (1984), Suddendorf & Corballis (2007) and by Suddendorf (2013).
- Hockett (1960), linguistic anthropologist, listed design features of language; displacement is mentioned as one only present in humans
- The relation between a tool or object and a sign as something provoking meaning is getting expressed in the following quotes: "...the basic analogy between sign and tool rests on the mediating function that characterizes each of them. They may, therefore, from the psychological perspective, be subsumed under the same category" (Vygotsky in Mind and Society; 1978) and, Holloway (1969/1992:48) "...I will argue that tool making and language are similar, if not identical, cognitive processes..."
- The implement in function as a substituting stimulus is referred to by Dickins (2001) as stimulus equivalence, but as a matter of fact got already mentioned by

Plato in Phaedrus when criticizing writing to be a “hypomnèsis”, an instrument used to recollect, that is to provoke reminiscences.

It will be clear that provoking series of reminiscences this way combined with the ability to make a choice opens a gateway in construing story-like orderings, scenarios, descriptions and explanations.

Building narratives (another extract from The Forgotten transition)

The structure of (1) self-initiated (2) mediated manipulation gives rise to (3) imaginative displacement. That driving dynamic in particular the object in its function as substitutive stimulus combined with the ability of making a choice can not be valued highly enough.

From then on the experience of the world is no longer something that only happens to man in the sense of overcoming. In the new situation he is able to bring experience into play by organizing material means that provoke states of arousal related to events characterized by displacement in space and time.

We find a similar idea in MacWhinney (in Givon and Mall, 2002:239) “In the model developed by MacWhinney (1999a), this first level of perspective taking involves the shift from direct perception and action to stored mental representations of perceptions and actions.”

In this way, an imaginative dimension gets - as an extra - added to the immediate bound experience. MacWhinney again “This is the first step in what I call the ‘ungrounding’ of cognition.”

Provoking self-induced imaginative displacement - and it should be stressed as a by-product of the manipulation of tools, realizes a shift in the development of a different order. It is no less than the stepping stone to what can be appreciated as the typical human culture, i.e. this mode in which imagination performs a pivotal role. It is not only the stepping stone but also the rupture in relation to the type of cognitive abilities of other animals, however close anatomically and genetically they may be. The perceptual and cognitive world of the human becomes very different.

But the magic of this type of experience based on displacement reaches further still. The manipulable object in its function as a substitutive stimulus can become associated to the properties of the manipulating human himself such as speed, force, success during hunting or in defending the group against a threat... This implies that the manipulation of the object in question can provoke a particular state (arousal, intention, directionality...) related to events which took place at a moment in the past located elsewhere. So he can provoke displacements mirroring properties

of him-self or of events which constitute his history of life, in short properties characterizing his self-image and -history¹¹⁵. This comes down to narration¹¹⁶, narration of the self as a special case.”

In short, the human becomes able to provoke imaginative content in the experience. But this product is not presented as something in isolation, as something completely set apart. It flows together with the outcome of direct perception as such presenting one stream of experience. Direct perception is coloured too by the condition of the primary motivation in relation to what appears in the Umwelt. In the experience it does not make a radical difference. Being present in the office – a tangible fact, and consulting the agenda for meetings to come – an imaginative content, both form one stream in the experience.

No one will comment that the meetings planned are not real. Not being different concerns the level of appreciation. Everyone will agree that there is a difference in quality. Thinking of a lemon and taking a bite in the real fruit makes a remarkable difference. But while everyone will be aware that the lemon in the imagination is indeed no more than an imagined unit and as an imagination not rich in quality, no one will doubt about the reality of the fruit referred to.

In the day-to-day flow of experience it makes no difference and by this it extends the world with a complete new realm. The cow does not ponder the problem where to graze tomorrow, the experience being closed, bound to the actual and the local. The human can freely consider different opportunities. He is able to decide and initiate to think about happenings to come, recall events from the past. That signifies beyond any doubt enrichment. It has also a flipside, which might even be considered a downside.

It is that mode or condition coined by MacWhinney as becoming “ungrounded”.

At this point the real subject, even issue, is entering the stage. The previous pages were necessary to understand the situation which might be seen as problematic, but on the other hand precisely exposes the condition characterizing the human.

¹¹⁵ “*Quaestio mihi factus sum*” in Augustine’s *Confessiones* (X, 33, 50), meaning “I have become a question to myself”, illustrates very strikingly the act in which the manipulator objectified himself.

¹¹⁶ For an explanation of the features of narrativity see Bruner (1990); in this context see also Dennett’s “The self as centre of narrative gravity” (1992). For the development of narrativity as the substrate, even cause of the complexity of a full blown language, reference can be made to Barnard (2013).

2. And now the problem

Composing narratives, in particular the character and implications of this ability is the subject to be discussed further. But before starting with **this a few nuances** should be made clear.

2.1 Nuances

What is discussed here is the ability to introduce scenes of imaginative nature in the experience and further combining these into simple storylines in a way parallel with what is called protolanguage in the form of holophrastic expressions. It is not about the full-fledged narrative forms modern humans are familiar with. Compare with the quite scant software interfaces from the eighties only offering what was strictly necessary while today the screen bombards the user with a rich visual environment.

Secondly the development sketched has nothing of a short term realisation. Two hundred years separate us from the industrial revolution while the step from Oldowan type tools to Acheul opens an abyss of about one million years or from Oldowan to the appearance of the modern human around three hundred thousand years doubling that window of time to an enormous two million. This should absolutely be kept in mind.

Thirdly, today the function of a narrative is understood as some form of transferring information. In *The Forgotten Transition* (2018) the hypothesis got formulated that the observable fact was the motor driving and maintaining the dynamic of provoking imaginative content in the other. It brought the latter (and the actor) in a certain psychic state, a kind of excitement, of ecstasy, exaltation or enchantment tending to belong to the realm of the magical and the mythical. But whatever the initial nature by making reference to some event from the past it also had an informational dimension. The hypothesis mentioned that overtime – over a tremendous span of time – the informational component gained importance.

To round up: the **fourth** remark will draw the attention to the complex nature of a displacement discussed. It obviously consists of a displacement as experiential content but it shows a particular perspective which is not exactly at stake here. A displacement expresses content which is considered as from a distance – we talk about something as existing over-there, and taking a particular stance – about something, considering it, looking from up to down-there. Distance and consideration are radiating from out the dynamics involved in the development of tools. It complicates the subject but again this is not the issue here. The issue is the imaginative formulation and extension of the Umwelt, the world as showing up in experience. This implies particularities and the discussion will exactly about these.

In a nutshell:

- there is a form coined protolanguage in its most simple guise
- there is an enormous window of time involved
- however not intended, the effects have an informational dimension
- it incorporates the characteristics of aboutness

2.2 Omnipresence

Let us begin with a striking observation made by the linguist Bickerton

“(...) the capacity to refer to objects or events not physically present — is an all-or-nothing category, like marriage or imprisonment: you’re either married or not, in jail or out of it, and signals either refer exclusively to the here-and-now or can go beyond it. I am not suggesting that protolanguage, at its birth, had the unlimited capacity for **displacement** that forms so salient a feature of language. But the emergence, at some specific time and place, of the first signals that did not refer explicitly to the here-and-now would have represented the crossing of a clearly marked frontier rather than a walk through a gradually changing landscape” (Arbib & Bickerton, 2010:168). These authors are linguistically oriented hence focussing on that dimension. I can go along with that in so far objectification as steppingstone is always present in the background.

It is an all or nothing category!

However the examples which will follow fall short, they offer a hint on how to understand this.

Someone who has learned to swim cannot unlearn this skill. Once acquired there is no way back to the previous stage. Today more than ever, we are immersed in the effects and possibilities provided by the global network. Even if it would stop to exist it would be impossible not to ponder its possibilities. An aboriginal in black Africa never been in touch with Western civilization has no clue about the offerings provided by a television set. He does not miss it, it simply does not occur in his world. Until one day (...) and from then on there is no way back.

The same goes for the introduction of the ability to provoke imaginative content to one self. Once this step made, there is no way back.

Bickerton rightly observes “the emergence, at some specific time and place, of the first signals that did not refer explicitly to the here-and-now would have represented **the crossing of a clearly marked frontier** rather than a walk through a gradually changing landscape...”

We have transcended a frontier he says but the full impact of this should be made clear.

It is not only a matter of adding an extension – imaginative in kind – to the experience. It is as a matter of fact growing out to an interface encompassing or veiling the whole of experience. It bears more the character of a transformation (more on that below).

Philosophers should remember Berkeley and Husserl proclaiming that consciousness or the mind provides the very first interface in experiencing the world.¹¹⁷ Of course we are flesh and blood, we feel pain and joy but whatever we experience – in so far it is not already provoked by a word as a stimulus of second order, it immediately is veiled in words. It is translated into some form of narrative raising a particular semantic field by this providing a particular meaningful interpretation.

One might argue that he feels toothache and only then reports about it. Agreed, but the point to be made is that as soon the pain rises it has become impossible not to word it, aloud or in verbal thought only. I invite anyone trying to think – anything – without immediately if not as first the appropriate words popping up.

Moreover words – triggers of imagination – provoke in a circular movement complete semantic fields. Take the word “milk”. No one will in that case think about stuff that makes an engine run but of cows, farms, meadows, butter... etc.

Concluding: as soon as this mode is entered it is impossible to avoid it let alone to roll back the development.¹¹⁸

2.3. The character of a transition

So far we had the omnipresence, not as something we actually have at our disposal but as a mode of being, a mode of approaching or of negotiating the world.

The second characteristic is about the nature of this transition. The term transition refers to one condition changing into another. One understandably focuses on the opportunities gained far less on what is no longer available and that is precisely what MacWhinney has in mind when writing about *the shift from* direct perception and action *to* stored mental representations of perceptions and actions” strikingly adding “this is the first step in what I call the ‘ungrounding’ of cognition.”

The ground is getting lost calling into question “what is meant by grounded cognition?”

¹¹⁷ “Gegenstände sind für mich (...) was sie sind, nur als Gegenstände wirklichen und möglichen Bewusstseins” (Husserl, Cartesianische Meditationen).

¹¹⁸ Reference to The Forgotten Transition (2018), sub II.1.3. Irreversibility.

Let us turn to the prototypical cow again, as a matter of fact to any non human animal. A scheme has been offered earlier summarizing some characteristics of the basic initial basic condition. That comes down to a lived or experienced volume determined by the abilities at the same time confinements of the body by this circumscribing the reach in time and space. This implies a topological situating and a reference to a position on a time scale. The former is easy to understand. It covers a space defined by the reach of the sense organs and of the motor capabilities from within a static position. How far is an organism able to reach with all capabilities of the body? Concerning the time dimension, research showed that that perception and action functions optimal in units of up to three seconds while short term memory reaches between twenty to thirty seconds. Even if there could be doubt about short term memory being a proper measurement of the lived present, these findings give an indication of the range in time covering what in experience is considered as the present. Of course animals are able to make use of heuristics in finding food or drinking resources and given an actual observation foresee where a prey might appear in the field of vision but all these are subjects of a different order altogether. Man is able to consider different options for the future, make a choice and in the end decide not to proceed to execution. Animals do not have these possibilities at their disposal. For an animal conditions of life may be a never ending burden, they are always getting triggered. This might be fired up by internal conditions such as being hungry or by external forces as by the appearance of a threat. Animals are subjects of determinants. Life in all its aspects is controlled heteronomously... no questions asked and in that sense no doubt present.

For the human however plural scenes in imagination (recall displacements!) open the opportunity of making a choice. It follows from the coherence of objectification, the stance of consideration and the ability to provoke displacement in the realm of imagination. It is a novel and absolutely useful acquisition. It has however a downside. The ability to make a choice creates openness and with this the problem what to choose. It introduces doubt a condition that did not appear – in that sense even exist – before.¹¹⁹ The prior unconditional heteronomous determination has vaporized.

It is at this point that the quotes of MacWhinney and Bickerton meet. Cognition is no longer grounded while this is an all or nothing condition.

This stage in the development is crucial.

¹¹⁹ There occurs a condition in animals too, a fraction of a moment in which the animal seems to be frozen between alternatives such as fight or flight. But this bears more the character of a circuit being shortened the eventual decision made a matter of reflex or intuition, not a matter of consideration.

To reframe this pivotal shift through a phenomenological lens: if, as Husserl observed, our primary contact with the world unfolds within consciousness, then the evolutionary innovation we have traced is the moment displacement in imagination became the new, autonomous ground of that consciousness. The capacity to evoke experiences detached from the immediate sensorimotor present ceased to be a mere tool and became the very medium of cognitive orientation.

The hominin, in this development, crossed what Derek Bickerton termed a clearly marked frontier, entering an irrevocably new mode of being-in-the-world. This condition is impossible to unlearn—akin to the permanence of knowing how to swim. Once this cognitive capacity for displaced reference and imaginative recombination is acquired, there is no return to a world of purely situated, stimulus-bound responses.

Consequently, the human does not merely possess the ability to construct narratives; the human has to construct them. The loss of the secure, heteronomous cognitive ground—where relevance got dictated by immediate biological imperatives and environmental affordances—created a void of potentiality. To subsist within this new existential space, the human is compelled to actively bring forth displacements, to build scenarios, and to weave narratives. This "has" is not teleological but existential: it arises from the inevitable condition of being confronted with the possibility of multiple, competing interpretations of reality, with no predetermined script to follow.

Before discussing the distinction between full and minimal semantics, one more clarification should be offered.

Following the line of explanation so far offered one might assume that narratives have to do with projections in time, recalling past events, thinking about the future. There is however more to it. Looking into the garden at this very moment what we perceive is forced through a verbal conceptual filter. A fragment of raw sensory data is immediately caught by a verbal concept itself being part of a more encompassing semantic field. Once the concept of tree triggered we think of the blossoms and the fruit, maybe recall the moment it got planted, a tree we like to preserve it as resting place for birds etc.

Summary

The understanding of the "world" based on embodied sensory input in tension with the condition of the primary motivation leading to relevance has been replaced by an interface using imaginative content framing the interpretation. This mode is

triggered by secondary stimuli of which the semantic payload is arbitrary. That implies that the interface is a construct of which the meaning is arbitrary. That characteristic does not imply that the meaning is taken as non committal and can be exchanged at random. Estimated as real it acquires the status of being real and as such a guide for behaviour.

3. Full semantics

What has been explained comes down to the following.

- The human cognitive condition phrased in a positive sense is based on openness; there are several stagings possible; in a negative sense it is characterized by uncertainty and doubt as being bound got lost.
- This condition of being without grounding has been caused by the introduction of the ability to provoke imaginative content and has at the same time to be answered by it hence the continuous flow of narratives. It at the same time embodies the deficit and the cure.
- It is an all or nothing condition or being bound like in the animal condition or detached but once the latter acquired it can not be undone.
- The human understanding of the world is a closed set of storylines and semantic fields based on displacements.
- The implication is that all that is produced by this ability or better still "skill" is a construct, a storyline composed of different scenes.
- The awareness of that fact makes it clear that the human has no one on one corresponding view on the world but on a phenomenon constructed by the skill mentioned.
- That construct repressed negotiation based on inherited and learned behaviour, heteronomous, grounded and closed in nature. It allowed organizing the setting in an autonomous way, taking different narratives into account and this in the perspective of reaching a goal set, the latter also a fruit of that novel ability in contrast to exclusively being driven by the primary motivation.
- The conclusion may be short: all is version, storyline or discourse.
- Narration overtook the previous approach still present in non human animals; however the same underlying goal - survival - remains.
- The awareness that all is discourse confronts with the responsibility in relation to the consequences of the adopted version.
- The disappointment – even unwillingness to believe - that this does not provide a truthful view on the world follows from a version with an identifiable historic provenance.

4. Minimal semantics

The idea behind the approach as will become presented is to reduce the influence of the content of storylines even abstracting these and restrict to listing procedures and strategies in order to realize a certain effect. It would be naïve to assume an absolute condition of abstraction in that domain. Every manipulation is borrowed from a context in which it has meaning. In the present case, that is mediated manipulation of elements recognized as objects. That perspective has an important implication. The structure and dynamics of it will define how fluctuations in the environment will be negotiated.

The goal of minimal semantics is to make abstraction of interpretations reaching beyond the restrictions mentioned. The range covered is broad. It goes from listing procedures on how to make soup, to how to ride a bicycle and subjects most interesting, on how to realise so called mental achievements like reflection. The endeavour is line with Lloyd Morgan's advice not to reach for interpretations in the realm of higher psychological processes when answers could be found in workings on lower levels. Agreed, he focused on animals, but the principle can as well get applied in the case of the human.

It offers an alternative for an all too essentialist inspired approach such as for instance offered by Penrose believing that consciousness is a manifestation of the quantum cytoskeletal state and its interplay between quantum and classical levels of activity. This might sound as an extreme illustration but unfortunately that type of approach is common. It is effortless accepted that cognition and different kinds of behaviour emerge from the workings of the neural tissue by this neglecting completely the execution of operations in the public area and elements in the environment playing a role essential to such a degree that cognitive states would not be possible without it.

This does not mean that essentialism has no ground, but it absorbs all attention by this veiling all other possibilities. The expectation is that the focus on manipulations and procedures can offer answers and solutions lying in front of the observer in so far he actually takes the effort to look and take the observation serious.

Avoiding historic based interpretations might effectuate a sobering if not purifying effect as the actual literature is still littered with references to intellectual atavisms such as Plato's proposal of the existence of an observer independent reality in the first place, which on top of that lays reach of the human using the right methods. The idea of mind-like or mental working by this tacitly maintaining dualism is another example of a historic based heritage.

Minimal semantics can be thought to show a degree of family resemblance to process philosophy. In essentialism the substance or the essence of the human for

instance remains what it is while sickness is something that accidentally happens to it. From that point of view change is an accident, an attribute, something not really belonging to it. In process philosophy on the contrary there is no question of an unchangeable essence. Thinking in terms of processes which in principle can be described, is the perspective to be taken. Philosophers such as Nietzsche, Heidegger, Peirce, Whitehead and Deleuze shared that idea.

Minimal semantics is also akin to operationalism as defined by Percy Bridgman. He suggested describing experiments in terms of measurable operations. Minimal semantics wants to confine itself also to a pure technical registration of manipulations executed or to execute in order to raise a particular effect.

And last but not least, minimal semantics expresses in a way a relation to a universal grammar. In so far the latter stands for object construction in perception and cognition, object recognition and the system or “logic” of manipulation, mediated manipulation in particular.

5. The necessity of a storyline

The conclusion that the interface instantiating the human condition generates storylines might provoke an all too hastily made judgement. If it is no more than a discourse in principle replaceable by any other, what then could be the value of it?

First of all being human, generating discourses is precisely what opens abilities not present in other animals. That might well be “the” quality to value. Secondly once acquired this mode the human has to do with it. Thirdly being able to offer a scenario implies that humans are able to set their own values and goals. Agreed, storylines around magical mythical elements may not offer the best of options, but proposing a model focusing on the interests of all people while taking available resources and abilities into account might be something to value.

6. The relation to minimal semantics

On closer inspection both modes have their proper advantages.

Apart of the fact that it cannot be avoided which in itself is not an advantage but a fate, full semantics offers the ability to set goals based on values. As such it provides the framework in which the common and individual way of life can be organized.

Minimal semantics by definition can not do that. Its method however delivers an economical and fair result.

In short, the human needs meaning; minimal semantics offers the most appropriate approach.

7. A final quote

“Whereof one cannot speak, thereof one must be silent.”¹²⁰

This famous quote from Wittgenstein suggests that there are subjects which are not susceptible for discussion. This expression refers to something “that what escapes being spoken about”. Following the line of the meaning expressed, there is somewhere really something existing – a referent - which cannot be spoken about.

However observe the different levels. What is getting expressed is the content of the story (telling that there is something...). It makes it look as if the speaker of this sentence is a neutral invisible instance pointing out xyz. However this very act – because there has to be a speaker otherwise nothing spoken – is also a storyline. All this encompasses the dimension of full semantics. Minimal semantics in turn is about the task to describe the procedures allowing this sentence to be uttered, and further how this very thought “of something which cannot be spoken about” could be brought forth altogether.

The transition

The previous contribution offered a rather gentle introduction. The following will go deeper into the relation between the function of the hands and the self provoked displacement in the experience.

¹²⁰ 7. Wovon man nicht sprechen kann, darüber musz man schweigen”, (Wittgenstein, 1922, Tractatus)

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manipulation underlying displacement

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Abstract

The ability to provoke experiences displaced in space and time stands, with little hesitation, as the cognitive cornerstone distinguishing the truly human hominin. This capacity will serve as our guiding principle. However, our investigation will not remain in the abstract realm of cognitive mechanics. Instead, we will direct our focus toward the public, material testimony of this radical shift—toward the altered objects and crafted landscapes that signify a fundamentally new interpretive engagement with the world.

We will scrutinize the material features themselves. We will ask how these forms invite manipulation and what this silent invitation unveils about a novel way of negotiating reality. Yet, this entire inquiry rests upon a primordial, embodied foundation that must be acknowledged from the outset: the decisive role of the hands.

This essay, therefore, does not treat the hand as a mere introductory stepping stone, a piece of evolutionary prelude to be quickly passed over. It posits the hand as the necessary and tangible condition for all subsequent development — the primary interface through which the world was first grasped, literally and figuratively, and through which it was, in turn, reshaped and re-conceived. The story of human cognition begins not with a spark in the brain, but with a reach, a grip, and a strike.

In exploring this, the exposition will take the form of an essay, allowing the necessary room for speculative connections and creative thought, while remaining anchored in the enduring evidence left in stone and bone.

Preliminary

In publications on the origin or on characteristics of language, it appears as a given no questions asked.

Take Andrew Smith “The controversy over the structure of early human language, and its subsequent transformation into modern language (...)” (in Arbib & Bickerton, 2010:99). Nothing seems to be said against the grain.

Over time I developed sensitivity for expressions which at first glance seem quite natural. They quite often organize understanding in a particular way which after all is not natural.

Smith’s quote illustrates this strikingly. Language seems to be present either premature or full blown but present from the very first moment on without questioning. One might object that the subject is not only language but also early or protolanguage and, isn’t that the stepping stone suggesting an evolution starting from scratch? Indeed but observe what is getting suggested by Bickerton, an authority on language evolution. He refers to word like units with simple atomic

meanings associated with basic pre-existing cognitive concepts. Wray even thinks in that stage of development of complex propositions (ibid:100). But simple or complex, units are presented as if they already exist. Question is where do these come from and why does one evolutionary branch seem to possess these and other species most akin even demonstrating similar use of implements, do not?

In a scenario like this there seems to be a period of absence of language and then all the sudden – even when presented as protolanguage – a period in which it is present. Where did it come from? Out of the blue or by genetic mutation? In the latter case there is no longer a problem. In spite of being outdated one might as well maintain Descartes' option considering language as a gift from god enabling man to express the thoughts produced by reason.

However this subject might be very intriguing I am not looking for causal factors. The aim is to raise an understanding about the processes taking place prior to the condition as pictured by Bickerton. What brought a hominin from being collapsed and entangled with the event at hand into the condition pictured as protolanguage by Bickerton. What are the procedures and steps bringing that within reach?

If the execution of these procedures deserve the label language is a different matter altogether. I prefer the idea that a particular skill most probably accidentally came into being and the usefulness of its effect promoted further development. At one time it reached such a degree of sophistication that a proper label got considered. The term language refers to a form of action in which the movement of the tongue (Latin: lingua) was involved. In that sense it comes down to a type of action.

Ingold scornful considers language taken as a (mental) faculty an invention of linguists (2002).¹²¹

Useful quotes

The quotes listed serve as relevant illustrations or as arguments provoking to be commented.

1. Displacement: crossing the frontier

I am not suggesting that protolanguage, at its birth, had the unlimited capacity for displacement that forms so salient a feature of language. But the emergence, at some specific time and place, of the first signals that did not refer explicitly to the here-

¹²¹ According to Ingold linguists recognized in the flow of the written form structures prone to analyze and discussion and considered these as representational for language in general. Ingold himself stressed the importance of speech as a mode of lively action.

and-now would have represented the crossing of a clearly marked frontier rather than a walk through a gradually changing landscape. (Arbib & Bickerton, 2010:170)

2. Displacement: al-or-nothing

Displacement, for instance — the capacity to refer to objects or events not physically present — is an all-or-nothing category, like marriage or imprisonment: you're either married or not, in jail or out of it, and signals either refer exclusively to the here-and-now or can go beyond it. (ibid:170)

3. Wallace's problem

Another crucial new feature was a departure from the direct linkage with evolutionary fitness that characterized all other communication systems. The communication system of each species represents something tailor-made to fit the adaptive needs of that particular species. It comprises just those signals that relate directly to the fitness of species members, and excludes any that don't contribute to such fitness. In language, no units in and of themselves relate in any way to evolutionary fitness; language as a whole may contribute to fitness, and words or sentences used in particular contexts on particular occasions may enhance fitness, but in the vast majority of circumstances they will bear no direct relation to it. (ibid:170)

4. Animals not referring functionally

But if signals with functional reference are seen as milestones along a road to language, the fact that no signal within the repertoire of the great apes exhibits functional reference becomes puzzling. If, on the other hand, animals simply choose signals that directly impact their fitness, several things become clearer. (ibid:172)

5. The relevance of displacement questioned

It also becomes clear why non-human signals can't combine can't displace and so on. They can't do these things, not because the animals concerned lack the capacity to execute them, but because the signals themselves evolved for purposes that make combination, displacement etc. wholly irrelevant. The signals are responses to events or situations in real time that might impact positively or negatively on the fitness of an individual animal, (ibid:172)

6. Asking the right question

To understand how protolanguage emerged, we should avoid the question, "How did protolanguage emerge?" Instead we should ask how, and under what selective

pressures, human ancestors became able to move from signals linked with fitness-affecting events to signals whose main function was to transfer factual information that did not require an immediate response. (ibid:172)

7. Some characteristics of full blown language

Open-endedness, creativity, combinability, displacement, symbolism were just some of the properties that had to be acquired. (ibid:172)

8. Bees and ants and displacement

There is good reason to choose displacement as the first protolinguistic development, since it is already found in a handful of non-human systems, principally (so far) in those of bees and ants (ibid:173)

9. The importance of the niche

I cannot overstress the need to take into account the ecological niches occupied by pre-human species; no-one should look at protolanguage before taking into account niche construction theory (ibid:174)

10. Processes to combine already shared with other mammals

What was required for these tasks might in principle represent (or be derived from) either capacities shared with other animals but selected for novel purposes, or novel, purpose-built capacities unique to the human species. But the null hypothesis clearly is that given symbolic units to combine, the processes used to combine them were ones of a fairly general nature, already present in the genome and shared with other mammalian (and perhaps even avian) species. (Bickerton, D. 2009. *Biological foundations and origins of syntax*. The MIT Press. p.12)

11. Merge and recursion, some task specific mechanism nothing to do with language

Merge involves recursion. It has been claimed in one widely cited paper (Hauser et al. 2002) that it does, and that recursion is unique to humans, requiring us to assume either a special mutation or the exaptation of some task-specific mechanism that predated—hence originally had nothing to do with—language. In linguistics, recursion is generally defined as the ability to insert one structure inside another of the same kind (Bickerton, 2009:6, *Biological foundations...*)

12. We submit that a distinction should be made between the faculty of language in the broad sense (FLB) and in the narrow sense (FLN). FLB includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for

recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements. We hypothesize that FLN only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language; hence comparative studies might look for evidence of such computations outside of the domain of communication (Hauser, Chomsky, Fitch. 2002. *The faculty of language: what is it, who has it, and how did it evolve?* Science – quote from the abstract)¹²²

13. (...) he (Chomsky) describes the operation of merge as “an indispensable operation of a recursive system” (2001). Add bifurcation as described by Richard Kayne (1984) to it and furthermore the model of Chinese boxes that fit together (Calvin & Bickerton, 2000) and all this results in the core of that (minimalist) program (Hauser et al. 2002) (in J. Gilbert; *The Forgotten Transition*; 2018:105)

The aim

The aim is to make clear the most fundamental building blocks and the dynamics involved in provoking an experience bearing the character of a displacement in space and time¹²³. The quotes listed above might become helpful in contributing that endeavour. It is clear that this discussion is not about language in the first place. It is about the introduction of the ability to introduce an experience characterized by a displacement in space and time. Language is and will be mentioned only in so far characteristics from one and the other seem to be related or similar.

It is unclear to me why and how exactly this took place. But it is within reach to point out the changes such as the occurrence of object patterns which could not have been suggested without the stance of taking distance. It is possible to describe the characteristics, the functions and effects of these changes.

In quote 5 an important observation in that respect is offered “It also becomes clear why non-human signals can’t combine, can’t displace and so on. They can’t do these things, not because the animals concerned lack the capacity to execute them, but because the signals themselves evolved for purposes that make combination, displacement etc. wholly **irrelevant**. The signals are responses to events or

¹²² Trained linguists will argue that there are many more characteristics involved in language. As explained in *The Forgotten Transition* (ref) the rules and operations underlying language can be distinguished into two groups: the basic mechanisms underpinning language as a human practice (merge, bifurcation, recursion) and local rules (for instance head first or last, verb or noun as dominant element) or dependencies having involved in the ordering of semantics (binding, empty categories, movement). In this contribution the focus is only on the basic mechanics.

¹²³ There are other terms in use. Tulving (1984) speaks of time travel, Hurford (2014) of offline representation and Gärdenfors (2014) somewhat similar of detached representation.

situations in real time that might impact positively or negatively on **the fitness of an individual animal**, (...)" (in Arbib & Bickerton, 2010:172)

The signals expressed are functional in relation to the fitness of the animal; the characteristics of signals expressed by humans are irrelevant in that perspective.

The first part of this sentence can be accepted without reservation. Any organism strives for survival. The second part is in my opinion correct to some degree. Also human signals can underpin action in the perspective of survival. A massive number of the expressions uttered are indeed irrelevant in that respect.

Important is that Bickerton draws the attention to the fact that non human animals don't "combine, displace and so on". Not in the sense that they could not make use of it but that these never come into being. Bluntly, these modes do not exist in the lives of these organisms.

Why do these exist in the lives of the animal called human?

That is the problem Alfred Russell Wallace struggled with (quote 3). The human animal seems to have abilities exceeding the needs related to survival.

But the question "why" puts on the wrong leg. It hints in the direction of a reason, as if there necessarily must be a reason. The idea something popping up without any purposeful reason seems to be out of the question.

But why? Why should it be impossible that a species stumbled over some experience which proved to be useful? Not even useful at first sight but simply surprising. As in the case of an implement getting associated with the meaning of a particular occurrence; the presentation of that implement provoking an experience characterized by reference to some event out of the actual now and away from the local ground. This is what is meant by "displacement".

Bickerton observes that this not even completely new. Ants and bees offer a demonstration.

This illustration is most probably not appropriate. Ants are laying down a trail of chemicals, called stigmergy. This might be different for the behaviour of bees which could be based on genetic heritage or/and learning processes in which conditioning plays a central role, but I have to admit not being an expert in that matter. Clear is that the mentioned behaviour is direct while in the mode of displacement as seen in humans consideration is of importance.

This at the same time is the stepping stone into the basic and necessary condition enabling displacement as the human exhibits. Consideration; a perspective characterized by taking distance in relation to something; in short aboutness are the keywords. The question is how did it come into being and is there an instance where this perspective, this attitude can be observed? The how question can only be

answered in speculative way which does not open a fruitful path to pursue this contribution. But “how” can also be understood in another sense, not gauging into the origin but about the context it might be emerging from. This brings us to the second part. The answer lies unconcealed: the tools brought forth by the hominin line which would evolve into the human species clearly express that feature. The application of corrections to a tool implies, stronger even: is synonymous with a taking distance. The tool being improved has to be looked upon in a way taken literally. It has to be held at a distance inviting inspection. This condition might be designated as spatially organized perspective, in short spatial cognition.¹²⁴ It is a stance quite different to the incorporation as exhibited by other tool using animals. This is indeed the type of displacement referred to by Bickerton dealing with proto language however as put in the preliminary remark I would not call this language, even be reluctant to call this protolanguage. Proposed is the option considering it a spin off effect from an occurrence in which a particular event got associated with an implement used in a particular action is preferred. It is in that setting indeed that particular characteristics of a Gestalt figure are becoming prominent and isolated giving rise to what becomes perceived as a clearly delineated unit.

In Western culture we are inclined to consider this as something substantive, something standing on its own, devoid of any context. But in order to understand its nature and function properly in spite of the fact it appears sharply delineated may not be deprived of its context. That object perceived from a perspective of taking distance only obtains its delineated character embedded in a movement of mediated manipulation executed by an actor with his particular anatomical infrastructure. Even taken more broadly: from an all encompassing scene consisting of nothing else than sharply delineated objects all prone to manipulation.

As the result of some transition the world perceived changed from a scene in which the perceiving organism collapsed with into a scene presented on some distance of manipulable entities.

By this the basic pattern is shown: mediated action, objects and the perception of a distance as an experience. This is the setting, the dynamic and the building blocks.

The study of the potential is important in two ways. First of all it enables to describe and to understand the opportunities emerging from this particular dynamic organisation. In second instance the object functioning as a second order stimulus opens the possibility to provoke displacement. As a provocative instance, in prospect one could also refer to a carrier of semantic payload. The point made is

¹²⁴ Spatial cognition is defined as the ability to perceive spatial patterns, organize action in space, and understand spatial relationships (Wynn, T. & Coolidge F.L. 2016. Archaeological insights into hominin cognitive evolution. *Evolutionary Anthropology* 25:204.)

that the dynamics involved in the manipulation of objects are – being the carrier mentioned – the same underlying construction of global scene in which different displacement contents are getting manipulated. So studying the dynamics of action is at the same time exposing the dynamics involved in the manipulation of scenes of displacement. In Bickerton's terms it might be called the dynamics underlying protolanguage.

Hands

Trying to sketch out the basic pattern as is the aim of this text, attention should go to the fact that the organisms in question do have and make use of ends of limbs that are able to grasp, hold and move whatever could be grasped, held and moved. Humans are hand centred in space¹²⁵. The latter is not to be understood in a Euclidean¹²⁶ or Newtonian sense but sensory and motor defined. In the Euclidean interpretation space is a novelty only existing in the thinking brought forth by the human kind. Space on the level of experience shared with species most akin and in so far this naming could already be used in that context comes down to the extent the eye can catch, the reach of locomotion and of the grasping hand in so far hands are present. So space is more a dimension of perception and of movement rather than an imaginative framework onto which orienting parameters can be set out.

The fact being equipped with hands is so trivial that it is overlooked altogether. However the importance of the logic of the hands cannot be appreciated enough. It could not have occurred in animals with hooves or in absence of limbs.

The human way of negotiating the world does not come out of the blue, it is not neutral nor independent and objective. It is harnessed by the particularities of the body. The hands provide the interface where the negotiation of the environment takes place¹²⁷. It sets and specifies the blueprint of the development at least of motor directedness, perceptual focus and cognitive patterns and strategies. In short, the importance of the type of embodiment is paramount.¹²⁸

¹²⁵ Cfr. N.P. Holmes in Z. Radman, 2013:57-70

¹²⁶ Wynn & Coolidge, 2016 are premature in relating spatial cognition to Euclidean spatial thinking. Because that type of understanding is only possible much later when the use of implements as secondary stimuli provoking displacement and thus projection got introduced. Silverman (1992, 2000) suggested that an Euclidean framed awareness could be based in the division of labour of hunter gatherers.

¹²⁷ In its own context not to be confused with what is explained here. Following Anaxagoras Aristotle considered the hand the tool of tools. But he also considered the hand as the product of the intellect and not the intellect brought forth by the possession of hands (De Anima, 432a).

¹²⁸ The following contrasting situation illustrates the importance. For a grazer the head is directed to the ground, the lips pulling the grass, the eyes directed sideways alert for eventual dangers. The world experienced is a conglomerate of ground directedness, grass and caution. Something similar is the case for the hominin being bipedal and provided with hands to grasp but directed in a very different sense. Further the following are of relevance in relation to the hand as channel of approaching the world: Radman Z. (ed), 2013, The hand an organ of the mind; Napier, J. 1962, The evolution of the hand, The Scientific American; Cagli & Coraggio, 2008, What the draughtsman's hand tells the draughtsman's eye, International Journal of Pattern

It could be noticed that the position and contribution has been observed but apart of the fact that the hands fulfil a central role in the existence of the human, is it well worth all the fuzz?

This misses the point completely.

Being the actual first line interface the hand centred orientation is far reaching. It implies that all interventions onto the world are framed within the logic of the abilities of the hands in cooperation¹²⁹. This easily escapes us because it is our very nature, the way we approach the environment. It is like the body of water for the fish. Before being characterized as “speaking”, for anything humans are manipulating beings. The following could help. What do all living creatures have in common? Being primary motivated, i.e. maintaining life and procreation¹³⁰. Several groups of species however differ in the way that motivation is getting realized. They differ in the way the burdens laid upon by the particular environmental conditions are negotiated. A bird has wings and a beak. It moves by flying and feeds by using the beak¹³¹. That is the systematic underlying its existence. That logic to use an inappropriate word is different for different types such as a predator like in the case of a tiger, a grazer like an antelope, the crocodile, the snake etc. What is that basic pattern underlying negotiating the environment for the creature which in the end will be called human? For the species most akin the hands have a twofold function. Chimps are knuckle walkers so hands are used to move around. But they are also used to for instance hold on the branches of trees, grasp fruit or a prey, hold the offspring, in some cases even handle an action supporting implement. For what would become the human line the function of locomotion has been divorced of the function of holding and grasping. Locomotion brings where the food is, the hands specialize in handling it. This might be an all too simple illustration but it comes down to the fact that main functions such as locomotion and manipulation are getting divorced and that being the case they specialize along their track. The upright walking can be considered a specialization, the same goes for the applications of the hands. They specialize in executing interventions. In summery,

Recognition and Artificial Intelligence; Tocheri et al.2008, The evolutionary history of the hominin hand (...), Journal Anatomy; Marzke M.W., 1992, Evolutionary development of the human thumb, Hand Clinics; Almécija & Sherwood, 2017, Hands, brains and precision grips, Researchgate.

¹²⁹ The trajectory of the human evolution is brought forth by the use of hands; it does not as a ghost out of Allahadin's lamp emerge from the workings of the neural tissue. Compare with Trivers observing that the brain is functional for surviving not in the task of producing knowledge (2002).

¹³⁰ Cfr. Darwin, The Origins..., recapitulation and conclusion “(...) all been produced by laws acting around us (...) growth with reproduction”

¹³¹ It is more then often said that man is special. But what to think of birds able to fly? Isn't that not even more surprising?

they are the first line specialists in the act of negotiation. But that has a consequence of major magnitude. It actually means that all further refinements originate within that framework and cannot do anything else then follow the “logic” of it.¹³²

The suggestion is that in the further development two stages can be discerned as will be explained later. In first instance the taking form of a perceptive configuration which will adapt to and fit the act of manipulation and secondly the use of the form given artefact as a stimulus of second order thus provoking displacements in time and space in the experience.

On closer inspection and way ahead of what has to come, how difficult is it to recognize in the act of speaking the manipulation of objects with the purpose of provoking a certain effect? Is it too bold to state that this is an example of negotiation?

At the risk of repeating myself this pattern is so low level or first line that it goes unnoticed, moreover veiled by a historical heritage that it is all about the ultimate truth far away from vulgar manipulations.

In short whatever the lofty semantic discourses we enrobe ourselves in, human behavior and our very way of being in the world can, from a rigorous technical perspective, be understood as a form of mediated manipulation. The logic of the hands provides the inescapable, silent syntax of human existence.¹³³

What are hands used for

What were the hands used for? To grasp branches while moving in the canopies, to grasp food, to hold the offspring, occasionally pick up a nodule and use it as a hammer to break the shell of a nut.

Hands come in pairs doing different things, a division of labour one performing a holding task, the other some action onto what is held.

Apes show a hand lateral preference or dominance on the level of the individual while in the human species for 85% the left hand is taking the holding function while the right acts. According to Uomini (2009) the evidence suggests that this may have emerged through the social transmission of increasingly complex, bimanually differentiated, tool using activities.

However remarkable it probably diverts the attention into the wrong direction. We should focus at the fact that the use of action supporting implements is not a human prerogative. Some of the closest relatives do. There is a common base. This is also what Bickerton refers to when commenting on language. This also can be applied on

¹³² The automobile whatever the actual degree of sophistication could only be developed within the logic of the abilities provided by the introduction of the wheel.

¹³³ Let us burry the picture of the human provided with special seemingly esoteric “mental” gifts and try to understand behaviour as a particular motor based way of negotiating the world.

displacement which will become discussed later. "What was required for these tasks might in principle represent (or be derived from) either capacities shared with other animals but selected for novel purposes, or novel, purpose-built capacities unique to the human species. But the null hypothesis clearly is that given symbolic units to combine, the processes used to combine them were ones of a fairly general nature, already present in the genome and shared with other mammalian." (2009:12)

The point made is the hominin and the line which eventually will become the human species share the basic conditions. This in some cases even goes for the use of tools.

Using implements also occurs in other animals

Capacities shared with other animals provide the most basic layer. That seems obvious.

On top developed novel purpose built capacities. Question is to what purpose?

Could that be language directly as Bickerton seems to suggest be it via an introductory phase of protolanguage? Or could it be displacement directly? Or what about the suggestion that the novelty developed in the context of something else and displacement came into being as an accidental spin-off?

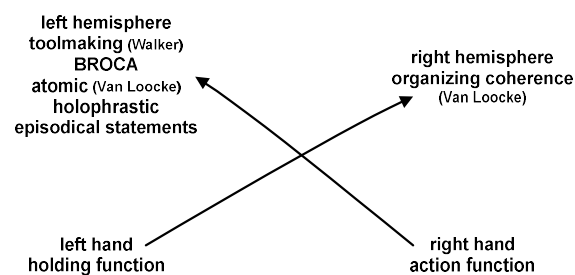
That suggestion leads me to Alan Walker in "The wisdom of the bones". He notes that results obtained from modern techniques used to explore brain activity (specifically positron emission tomography, or PET) show that the area of the cortex surrounding Broca is also related to manipulation of the **right** hand. This means that the development of this area in the first humans was an adaptation not related to speech, but to dressing stone as a candidate for that something else mentioned (in Arsuaga & Martinez, 1998:242).

The reference in this quote made to the function of the right hand triggers another thought. I am jumping rather haphazard but allow me to deal with this first and then return to the basic building blocks and dynamics.

The move made now is somewhat similar to reverse engineering because the following quote is about language as a final condition in the phylogeny but it may as well be relevant for motor patterns (in an earlier stage). "The statements formulated from the left part of the brain have mostly an 'atomic' character. They depict what is happening here and now in a few evident sentences. The left part seems not to be able to produce a coherent narration. The right brain part however seems to have codes of *a not lingual nature* (stress added) at its disposition, allowing

it to organize the atomic sentences into a coherent history.¹³⁴ So, producing a coherent narration seems to imply more than the linguistic centres situated in the left brain part.” (Van Loocke, 2008:436) The left part of the brain is related to the right hand. What is called atomic referring to here and now scenes might on the level of semantics be called holophrastic. Both schemes joined provide a striking pattern.

The right hand engaged in meaningful single units corresponds with holophrastic statements as the content of the left hemisphere. The left hand is occupied in the holding (together) position and is related to the right hemisphere which is able to provide coherence.



This scheme could be significant for a theory of language in which the motor abilities of the hand(s) play a central role. In that sense quotes 11 and 12 might be of relevance “ (...) recursion is unique to humans, requiring us to assume either a special mutation or the exaptation of some task-specific mechanism that predated— *hence originally had nothing to do with—language.*” (stress added) And “We hypothesize that FLN¹³⁵ only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language hence comparative studies might look for evidence of such computations outside of the domain of communication (Hauser, Chomsky, Fitch. 2002).¹³⁶

Accepting the initial idea that man originates as a hominin then unless a divine intervention or a mutation is assumed, the most plausible answer is that an already

¹³⁴ Ian McGilchrist offered a extensive volume on the different functions of the brain hemispheres (The master and his Emissary; 2009)

¹³⁵ FLN, faculty of language in narrow sense.

¹³⁶ From the sixties onwards Chomsky made a dominant mark on the study of linguistics. It seemed for many years as if there was no other approach than his flavour of a universal grammar (transcendental transformation grammar) be it ever in flux, an ever changing theory in progress. There were and are however other schools up and running. Think of the cognitive grammar proposed by Langacker or the theory of mental spaces by Fauconnier. I have been greatly influenced by the ideas on projection as a determining factor in semantics as formulated by Lakoff and Johnson. For an excellent overview on the history of linguistics: Seuren, A.M. 1998. Western Linguistics, a historical introduction. Blackwell.

existing strategy must have provided the steppingstone. As Francois Jacob states evolution is not as much revolution but tinkering with already existing capacities (Science, 1977, vol. 196, nr 4295).

Let us briefly return to the scheme above anticipating on what will be coming when referring to meaning by association. The scheme implies two levels. In the first items are held and manipulated with the respective hands fulfilling a particular function. The second layer refers to semantic contents of a holophrastic nature organized and driven by the same dynamic division of roles. Thus both are at the same time different but cooperative. The peculiar fact is that the material implements are getting associated to the semantic content such that manipulation of the first implies manipulation of the latter (bottom up)¹³⁷. This in its own right is already a remarkable fact deserving all attention. But this is not the end of the story. As the semantic content gives rise to a particular experience, both actually being synonymous, that experience in turn can drive the manipulation of material implements (top down). So once a manipulation of that type fired up the dynamic changed into an endless driven feedback circle.

However anticipating on what has to come, it seems the right time have it introduced.

The basic patterns guiding behaviour

Coming back on the factors responsible for framing the way the environment is getting negotiated the question is what the logic of manipulation might be. What are the basic patterns guiding behaviour? A few steps into that development will be suggested.

First step: primary motivated meaning

At the lowest level primary motives are providing relevance. Being the same for any creature it is not a criterion allowing discrimination between abilities of different species. The communality should anyway be kept in mind as the omnipresent relevance giving motor. The organism, any organism is not an idle instance; it is driven by relevance from the very beginning. It would not be wrong to say that life and relevance are two different terms referring to the same.

¹³⁷ A fact that W. von Humboldt already observed.

Second step: the influence of the hands on the formation of relevance

For the **second** step it is obvious that the mode in which the burdens of the environment are going to be tackled is determined by the bodily abilities, in short embodiment. The difference in embodiment among species determines the way a particular world will be construed and thus become experienced. It will not be difficult to accept that the world of a bird differs drastically from that of a reptile. Oddly enough this insight seems to be lost in the case of the human. The idea tacitly and persistently lives that the human enjoys an objective and transparent perspective outside the realm of embodiment. But what good reason could there be to accept that conviction, why should the human be different in that respect?¹³⁸ Concluding that here man is getting approached in the same way as any other species.

From that perspective the hands as first line if not exclusive interface are of decisive importance.¹³⁹ They offer a particular form and abilities bringing forth proper strategies or ways of dealing with aspects of the environment. The environment perceived as problem got in the first instance fired up by the primary motivation. But how this can be tackled can only be defined by the embodiment - in extremis the joined contribution of the hands; hence the expressed conviction that the hands are of decisive importance. Therefore the focus on manipulation opens the major perspective onto what is around. This is providing the all determining blueprint of, the ultimate baseline for what will follow in the further course of the development. The importance of this might become crystal clear when contrasted with the mainstream idea that the human is foremost characterized by his mental capacities suggesting that the body is some kind of subordinate tool, an instrument to realize the higher capacities. That idea has been put forward by Aristotle. But Wells was right when he wrote in "The War of the Worlds" that the hand was the teacher and agent of the brain.¹⁴⁰ It is the hand indeed moulding the world we access in a definite way.

It can be argued that it is at least equally true that mind goes over body as by postponing the satisfaction of an urgent need. I will not go into the problematic character of the concept of "mind", accept its common sense meaning for the moment. What is meant here and also can be deduced from Well's quote is that the

¹³⁸ Plato picturing a realm of ideas as the forms of ultimate truth offers the most telling version which has left its footprint on the history to follow. As Alfred North Whitehead observed, the history of Western philosophy is a footnote to Plato. Plato's version however is nothing else then one of the possible answers on the question that stamped Greek and hence all following Western thinking: what is the nature of that what is (unchangeable)?

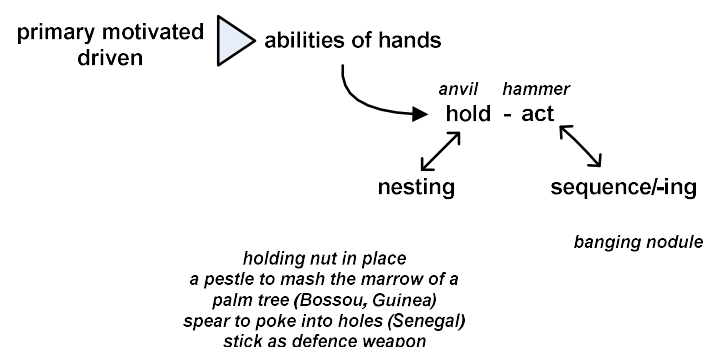
¹³⁹ This is so basic that the terms manipulation and handling, both referring to the contribution by the hands, is used in the most general sense of exerting any kind of influence onto something else.

¹⁴⁰ Mentioned by Holmes in Radman (2013:70)

form of and the operations coming forth from the body are primordial constitutive in any sense. They provide irrefutably the blueprint in which framework all development to follow could come into being. But indeed within that frame skills often called mental in kind, can be developed which can engage into actions going against the rules the blueprint itself as by mentally deciding to go on hunger strike. But this capacity to make a decision of that kind could ultimately only come into being within that very framework making this opportunity possible. That is the second step.

The third layer: the use of implements

This too does not emerge from a neutral background but shows a particular and thus meaningful ordering in space and time. One hand holds while the other acts. It implies a division of tasks. Holding and acting takes place in a particular order: in so far both hands are involved there is no action executed before holding. Further actions are performed in consecutive steps. Holding expresses yet another relation. It is a mode of nesting one item in the other, boxes into boxes. Might this be the stepping stone into recursion?¹⁴¹



This is more than a dumb scheme restricted to an application which only can be repeated over and over again.

Besides, the Cartesian suggestion that animals are automatons executing reaction in a mechanical way is flawed. This became convincingly clear by animals solving complicated contraptions in lab settings. As Shettleworth testifies quite simple

¹⁴¹ According to Everett (2005) the Pirahã people living in the Amazon region do not expose recursion in the use of their language. This might indeed be considered the case when language is seen as divorced from the speaker. But taking lingual elements as material units into account the speaker can be considered the holder of material elements and so expose the relation of some thing or instance holding something else. Further in the FNL Chomsky observes that this might well be the only characteristic and on top of that developed in a context outside the domain of communication (quotes 12,13)

processes having nothing to do with discursive form of reasoning are able to cope complex problems (2010). That is getting confirmed by research in robotics and artificial intelligence (Moravec, 1988, 1998)¹⁴². So this scheme has more in store.

The following observations are relevant.

Firstly this scheme is applicable on non-human animals too in so far they dispose of hands. Secondly the abilities opened by this coincidence are particular in respect to the global strategies in negotiating the world. As such they are to be discerned from these of grazing animals, strategies applied by avian animals and of these of animals not having protruding limbs. It is a particular way of dealing with the challenges emerging on the borderline of primary motives and what is environmental at hand. Thirdly the implements used by non human animals are simple, not or hardly modified, produced on the spot of action or nearby and aimed at one particular task. There is yet another observation of utmost importance. In spite of the fact that the line which ultimately would bring forth the human species is akin to hominidae implying that this development starts with the same abilities on the level of cognition and manipulation, the implements used in action at some point testify of a type of adaptation¹⁴³ which is extraordinary to say the least. It reaches much further than a Caledonian crow for instance producing a hook tool.¹⁴⁴

In short, it is unknown what exactly took place but considering that it did not concern a miraculous intervention, the conclusion is obvious: something has changed in particular in relation to the way the environment is getting appreciated. The question is “changed in what sense?”

The argument suggested goes as follows.

The artefacts found in the field by paleo-anthropologists and these used by apes are indeed different but most important both provide the corpus of tangible material prone to observation (empirical component). These developed in the line which would end in the human could not exist in the form they are without a behavioural, perceptive and cognitive complement (an assumption). Object and complement are like hand in glove. With that relation “in mind” the changes observed in the object at hand inevitably testify of changes in the complementary dimension.¹⁴⁵ From this follows that the tailoring of a flint nodule into the form found in for instance

¹⁴² Maybe a step too far “Simple heuristics that make us smart”, (Gigerenzer & Toth, 1999, Oxford University Press) illustrates the power of rather intuitive approaches (in contrast to these guided by the principles of logical ratio).

¹⁴³ Cfr. Marzke (1992); Almeceja & Sherwood (2017).

¹⁴⁴ An excellent book on the use of tools by animals, Shumaker, Walkup and Beck, 2011, *Animal Tool Behavior*; Oxford.

¹⁴⁵ A rather lame analogy, but think of chocolate as the material side and the taste as the other dimension. It will not come difficult to realize that through the phenomenal lens both are actually one and that the analysis is a schematizing intervention.

Olorgesailie¹⁴⁶ requires a particular perspective, a stance of consideration for which there are no signs in other animals making use of nodules. That stance suggests the holding of the implement to be modified to be held by the agent in front of himself.¹⁴⁷ It encompasses in one flow the gesture, the gaze and the experience of distance in relation to what is in front of.¹⁴⁸ This is radically different in relation to the intertwinement of an organism engaged into what is of relevance, being centric in the experience of a condition of unity. Running ahead again this is the point of germination for what much later will be called “aboutness”. I do not agree with Bickerton in the fifth quote expressing that non-human animals can in principle provoke displacement but they don’t do it because it is irrelevant in the light of fitness. For displacement to be elicited a readiness to a perspective of distance should be present but that is excluded where full engagement in an event is in play. There is no perspective of distance in there. Distance in that case is to be understood as an attitude of consideration, not as the gap between marks in a geometrical frame of reference. Furthermore, as Bickerton explains in quote two: displacement is or is not and this allows to add that the observations of the tools used by non-human animals it clearly is not.

This is the exponential sign for **the third step**.

Before going on, observe that the argument did not take the form of “it happened in order to...”¹⁴⁹ but “that experience must have been there otherwise the modifications observed could never have been realized”. The first form implies teleology, the second is a deduction.

Difference in perspective, the result of development

Drawing attention to a difference in perspective in spite of the fact that the species involved are family suggests that this is a matter of development; it is not a natural given condition¹⁵⁰. This is getting confirmed by studies in developmental psychology, physiology of seeing and reports on the experience of blind people gaining the faculty of sight. These made unequivocally clear that recognizing and

¹⁴⁶ Paleolithic archaeological site in the Eastern Rift valley, Southern Kenya. The form is that of an Acheul hand axe, an already sophisticated form but chosen here because earlier types such as Oldovai are prone for discussion about being a real modified tool or not.

¹⁴⁷ It reminds of Hegel’s expression “für sich”, literally to be understood as holding in front of himself.

¹⁴⁸ It is a particularity of the Western analytic view to divide a scene in different substantive elements each to be considered in its own right whereas in the practice of life the viewing eye and reaching hand are one.

¹⁴⁹ As in Holloway (1992) explaining that language *had to come into being* as an answer to an ever more becoming complex social organization.

¹⁵⁰ The qualification “natural” needs to be specified. It is not referring to the initial condition the human once shared with the other great apes. It has neither to do with nature understood as the raw condition untouched by human intervention. Natural here refers to a condition *attributed* by the human, the quasi romantic idea of virgin earth existing in the appreciation of the human, some condition having affinity with the sublime. In its extreme it is nature as often thought by new age adepts or back to earth defenders of natural grown food

identifying meaningful entities in the environment is the result of experience based and learned processes.¹⁵¹ These studies provide indications that what is seen as meaningful is the product of needs and abilities of the physiology in relation to what – to be understood as ‘chaos’ – is at hand ‘out there’. This is not only a matter of semantics but also of structure. Semantics refers to the difference between a carrot and an egg as food for instance¹⁵². Concerning structure, the form tools used by humans provide some indications. They are in a sense similar to these used of animals but in another sense quite different.

Different in what respect?

As mentioned the primary motives are the very first factors determining what in the chaotic input is of relevance. One does not have to look out¹⁵³ for what is of importance; it is selected out and imposed by the basic needs. Being hungry directs the focus on food. The structure or the form it takes can be described in terms of Gestalt-psychology. This approach is not imposed by theoretical presuppositions but is a model which in origin resulted out of research into the basic elements in perception. Form and content can be described as that what is considered being relevant to protrude absorbing all attention while what is of no or less importance diffuses into the background. In short, what is salient becomes figure characterized by relevance, fluency and dynamics. The posture of the cat having a mouse in its visual field is one of total concentration, entanglement even. This is no doubt the optimal organization in order to capture the prey. It is however very different to the posture of evaluating consideration needed to apply the appropriate modifications on a silex tool in order to improve its efficiency.

This short impression offers a glimpse into the characteristics which might be attributed to the joint cooperation of eye and hand. The drive bringing forward what is relevant remains unchanged but the focus is directed to formal characteristics affordant in relation to the form of and the reach of the motor abilities of the hand(s).¹⁵⁴

¹⁵¹ Riesen, 1950; Ackroyd et al. 1974/2007; Foley, 1985; Degenaar, 1996; Fine et al. 2003; Gregory, 2003; Jacob & Jeannerod, 2003; Kimchi et al. 2003; Ostrovsky et al. 2009; Held et al. 2011; Huber et al. 2015; Gordon, I.E., 2004, Slater et al. 1990; Uttal et al. 2000; Wertheimer, 1912. Kellman in Gelman 1996 to name some important sources.

¹⁵² Or take a grub, for most of the Europeans these appear disgusting while for inhabitants of the rainforest they are appreciated as a delicacy.

¹⁵³ The inclination to look out for meaning is a human characteristic. Animals do not look out for meaning in that sense. In the case of hominin it is an anachronism, in the case of animals is out of context altogether.

¹⁵⁴ This is certainly the moment to refer again to the book edited by Zdravko Radman (2013); to the work of E. Marzke 1992; Almeceja & Sherwood 2017; John Napier 1962; Tocheri et al. 2008 and many others. Furthermore the stress lies on the relation hand, eye and affordant element. The forms referred to grow out of that relation and should not be confused with geons part of the model suggested by Irving Biederman (recognition by components).

Edges become clearly delineated fitting the grasping movement, the holding and the active hand.¹⁵⁵

It forces the perception in a particular direction reorganizing the setting and configuration of what is perceived. What is of relevance is retained on the foreground, the basic Gestalt principle remains but it is getting organized in terms or rather forms of manipulable units prone to be grasped. What is of importance in respect of the latter draws the attention, becomes salient and delineates a graspable unit.

A process of ungrounding¹⁵⁶ takes place in two directions. On the one hand the graspable form is becoming cut out, clearly demarcated from whatever is surrounding. It is becoming distinct, a denomination derived from the Latin “distare” implying distinction and what is distinct from something else is also at a distance from it. The appreciations “distinct” and “at a distance” are actually one and the same but viewed from a different angle. The form is becoming distinct and at a distance from similar forms and from the grasping hand. So it could indeed be said that the distinction unfolds in two directions: in relation to similar elements and in relation to the perceiving and acting instance. What until then was experienced as one becomes divided, expressing distinction and distance. In the previous period the *usefulness* of the implement taken in and becoming one with the hand was the only criterion driving to make use of the implement. Usefulness remains the bottom line drive - why should an implement being recruited otherwise - but the attention for the characteristics of the form gains ever more relevance and becomes a criterion in its own right.¹⁵⁷ The characteristics remain functions of the use but transcend the status of purely embodied affordances. One cannot but

¹⁵⁵ This is a superficial description of the change in perspective elaborated in other contributions such as in *The Forgotten Transition*; *Beyond the material engagement theory*; *Building cognition, objectification as linchpin*.

¹⁵⁶ “In the model developed by MacWhinney (1999a), this first level of perspective taking involves the shift from direct perception and action to stored mental representations of perceptions and actions. This is the first step in what I call the “ungrounding” of cognition” (in Givon & Mall, 2002:239) The term “grounding” needs however some elaboration. This condition could also be called “heteronymous determined”. The organism is exclusively triggered by endogenous or exogenous factors. Being hungry for instance drives to look for food and eat. It cannot prefer not to eat. One could argue that some animals like squirrels are stocking up for the winter but this too is a condition which can not be chosen neither neglected. There is no decision taking in play. The qualification free will is not appropriate because not existing at all. As such the organism is embedded and driven blindly by conditions or it is fully grounded.

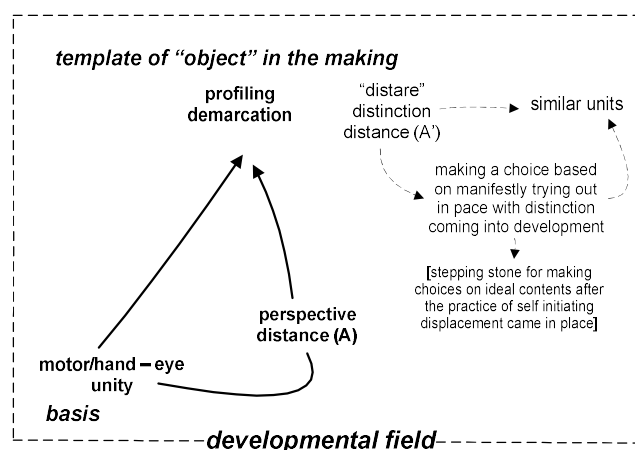
Evidently the opposite condition is being ungrounded, being able to make choices. But expressing it this way implies a caveat. It is a striking illustration of the Western tendency of thinking in terms of dualities: or this or that but not both. In that sense it comes down to being heteronymous determined or making decision and choices in an autonomous way. It seems as if there must have been a tipping point. This is however not the case. The behaviour of humans too is to a considerable degree determined in an heteronymous way. Humans are taken and driven by hunger too but in the end they are able to make a choice: eating, postponing or even refusing to look for food. So on top of the basic condition in some cases it is possible to make a choice.

¹⁵⁷ On the relation between the primary motivation and the logic driven by the development of tools, reference to the *Concluding Reflections*.

speculate that this is most probably a long term development even repeatedly disappeared in forgetfulness to reappear later in a different location. Once this organizing perceptive template is in place it does not focus on and select one single configuration of apt characteristics. It becomes like an overall filtering template perceiving the scene in terms of these characteristics. In that perspective different candidates seem to appear. Think of an affordant nodule on the bank of the river. It does not present itself in isolation as if it was the only affordant nodule in the world but it is one amongst several similar nodules more or less or equally affordant in relation to the formal criterion.

The term object¹⁵⁸ may be premature at this point but if used then it could be said that different units profile themselves and confront the agent driving him into a choice. Again it should not be understood in the sense of a mental capacity of being able to make choices¹⁵⁹ but as a condition teasing the agent to try out, evaluate in a sense, and make a choice in a rather natural way.

Caution is once again in order, this explanation is not to be taken teleological i.e. 'this' took place so that the result could be (...) ¹⁶⁰ but the archaeological findings of hand axes are such that something like this must have been the case. Being emerged in an event could not have provided the suitable environment for operations to bring forth an artefact like an Acheul hand axe. Being able to distinguish sharply is a necessary prerequisite.



¹⁵⁸ From the Latin "obiectum" i.e. things put before (the senses)

¹⁵⁹ Think of a chimpanzee finding different fruits within reach. Picking one is not based on some mental evaluation but on low level parameters such as the attractiveness or of what is most close, even tilting into the inclination to grasp as many as the hands can manage. There is a tipping point in being driven rather blindly by the needs or seduction and of making an intuitive choice.

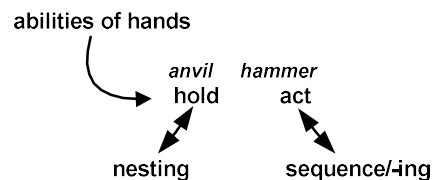
¹⁶⁰ In the sense Ralph Holloway did when dealing with language. He suggests that language had to emerge because the social organization became thus complex that it was needed. (Holloway, 1969)

The transition of the condition called centric into a perceived set of distinguishable and graspable units is of pivotal importance for the further development.

The effect on the basic logic

In the perception of the cat the prey is part of its centric existence (Plessner, 1975: chapter 7), a non-duality (Simms, 2008:2)¹⁶¹. The characteristics radiating of the human tools expose a very different setting: clearly delineated units prone for manipulation. This being prone implies a stance of consideration, of observation and evaluation from a distance.

Recall the basic scheme



..the units related to the act of holding and of acting become seen discerned from one another.

Once again this is referring to a transition spread over an extremely large window of time, a fact which cannot become stressed enough.¹⁶²

What does that being able to discriminate mean for the negotiation of the Umwelt? In pondering on this one has to be aware of the seducing tendency to explain why it all happened. The Western culture is pre-programmed to look for causes. But that is not the point here. The attention should be directed onto the obvious fact that it happened as testified by the form of the artefacts founds and, on what these expose as possibilities until then not available. In short **the focus is on the characteristics of the changes**, on the functions and the effects of it.

The transition from being bound blindly completely to the ability to make a choice

What clearly changed and probably is of utmost importance is that the hominin in question **no longer** seems to be **bound blindly** to the situation at hand, the

¹⁶¹ Plessner offers a striking description. Also Piaget (1929) mentions this condition referring to a protoplasmic consciousness but I do not prefer this because of the suggested relation to consciousness which to me is not appropriate in the phase yet. On the development of learning to see/interpret the environment in a meaningful way, Kellman in Gelman et al. (1996)

¹⁶² Recall Wegner drawing the attention onto the moving earth crust which only could come situated in an enormous window of time. In the actual situation it is not that long but goes back 3.300.000 years which already transcends imagination.

behavioural response dictated by genetics, instinct or programmed by recurrent experiences. This is once again not an assumption out of the blue but is getting testified by the tools unearthed. They could not have been produced within a condition of being bound.

As mentioned earlier the concept of that condition too deserves some clarification. I am aware of the fact that I may repeat myself but these concepts and tacit understandings are so pervasive and resistant that a constant alertness is justified. As Westerners we are not only trying to understand situations strictly in terms of cause and effect but also in terms of dualities. In that sense being bound seems to be positioned against being free as complement, being able to choose between alternatives. But in what is the case here genetics and learning processes do not disappear when a new situation emerges. They remain influential and so the new situation is not a complement annihilating the previous factors but an extra possibility.

This possibility is not a mysterious faculty appearing out of the nowhere. It is a plain and simple effect of – as suggested the very slow - introduction of delineating the formal characteristics going with a growing proficiency in manipulating implements supporting action. In that transition the perspective of looking at something as if it was placed at a distance, becoming detached or divorced of that centric experienced condition, dawns. Again all this is not coming as a bolt of lightning but is getting produced by tentative experimentation of the exploring hands. The ability of making a choice between alternatives which might come to us as a radical tilting point is therefore not a mysterious condition coming out of nowhere but is brought forth by the accidental ability of experimentation going hand in hand with the changing perspective of distinguishing different forms apparently perceived at a distance (scheme 'developmental field'). The agent is not all the sudden presented with a mysterious faculty; he is making use of faculties already present.

Most probably the conditions of the niche changed driving groups of hominin into bipedalism as a consequence in turn liberating the fore limbs of the burden of locomotion at the same time reorienting the perspective on the environment.¹⁶³ This might have resulted into the progressive discrimination of what fitted the hand in the light of some action to be performed, a discrimination of which a stance of growing distance taking was part of. However plausible this might come, it is of

¹⁶³ Think of penicillin. No one intentionally invented it. The conditions were right and the human researcher forgot to put some tray with a culture in a safe place. The conditions and the human action resulted in a not intended but useful result. Discussed in this text has nothing to do with inventions of medicine but what I want to make clear is the occurrence of useful effects from out quite simple changing circumstances.

course no more than speculation. As said what counts are the observable signs demonstrating new characteristics going with changed ways of handling, seeing and appreciating.

Being able to **discern different entities** in contrast to the experience of collapsing with the event of the moment exposes room to try out. It is not an opening to try out in a non-committal way, it is a condition of imposed affordance. Like a cup invites to receive hence the term recipient, the condition invites even pulls the agent into the act of exploring what is at hand. Take the Acheul handaxe¹⁶⁴; it is not a natural force-fed necessity. It cannot be anything else than the product of trying out and making choices from out a perspective of tangible evaluation. The label 'consideration' is at this point all too strong referring to a mental inclination. It has to be seen on the level of the tangible. It is all about actions in line with what hands able to grasp allow. That does not suggest an unlimited freedom appearing out of the blue as a mysterious ability. It comes down to possibilities confined by what hands can do.

A glimpse on the ability of freedom is a risky suggestion because it tacitly becomes understood in an absolute sense. This probably is a heritage of Plato's ideals, instances with a type of esoteric qualities, heavenly, idle and endless. In that sense "freedom" is shrouded in esoteric veils. But on closer inspection any type of freedom does come down in finding a set of possibilities until then not existent within reach plain and simple. In this case it builds on existing abilities such different types of action distributed over the two hands, the particular distribution of tasks and the particular orderings consecutive actions are executed.

It will be obvious that being able to discern distinct configurations – I hesitate to use the term "objects" already - will lift the structure of holding something(s) to a new level. Remind that the terms distinct and distance are related to the Latin "distare", meaning standing apart.

The minimal program as a relevant approach

However this contribution is not about language the following quote (12) might come useful:

a) "Faculty of Language Broad (FLB) includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion,

¹⁶⁴ Agreed this is sophisticated form produced long time after the initial steps onto that path of development, but it has been chosen as illustration because its degree of sophistication and standardization offers a clear demonstration of what is meant.

providing the capacity to generate an infinite range of expressions from a finite set of elements.”

b) “We hypothesize that Faculty of Language Narrow only includes recursion and is the only uniquely human component of the faculty of language.” and

c) “We further argue that FLN may have evolved for reasons other than language”¹⁶⁵

What is the meaning of this?

In first instance the authors relate the faculty of language to a sensory-motor and a conceptual system, which is a perspective very similar to what is defended in this paper.¹⁶⁶ Pointing out recursion as the only human component is prone for discussion. On the one hand by considering it as such the exceptional importance of it is becoming stressed. But on the other hand I think recursion can in its primary form be observed in the act of holding an implement, it is actually mirroring a motor action.¹⁶⁷

The point to be made is that in spite of the fact that recursion can be observed in apes handling tools, the human being able to discern discrete units to hold and combine the one into the other is lifting this act to a level opening different possibilities. In the embedded situation in the case of the apes there was no choice in the sense mentioned earlier. The action of the ape comes down to an all encompassing gesture while in the new situation observed from a distance, different entities are ready to grab and chosen from. The blind pressure to make a particular choice is left behind. This is a new condition, a tentative stance of consideration allowing one unit to be used to adapt another resulting in an Acheul type handaxe for instance. Apes do use hammer-stones picked up on the basis of intuitive affordances, but they never tailor the implements chosen.¹⁶⁸

Freedom of choice embedded in operations

The condition in which the hominin collapses with the circumstances of the environment into one single world experience, which Plessner would call centric, transferred partially into a perspective onto the environment composed of manipulable discrete units.

¹⁶⁵ Hauser, Chomsky & Fitch. 2002. The faculty of language: what is it, who has it and how did it evolve? Science.

¹⁶⁶ Taking the history of Chomsky's models into consideration, this in my view is a quite remarkable point of view.

¹⁶⁷ For that reason the observation that the Pirahã people do not apply recursion is flawed. The linguistic expressions are embedded in the very act of bringing them forth indeed.

¹⁶⁸ Again, there is a grey zone in which implicit heuristics reach further than automatons could realize (recall Shettleworth).

This new condition is not to be understood as an opportunity emerging from a new mental condition the latter to be taken something existing on its own. Take for instance 'being kind'. That comes down to a series of personal interventions which through repetition in the end becomes appreciated as a quality called 'kindness' as if this would be something existing in its own right. In the case relevant here the reorganization of the focus in concert with the out reaching hands results in a demarcation of manipulable units bringing forth affordant entities. As the product of a filter redefining all what is perceived, the scene is presented as a set of units from which one can be chosen above the other on the basis of trying out. This is not only a matter of motor manipulation but involves also a weighing what fits best, an act of appreciation or evaluation. Being biased to analyze everything that happens we are inclined to divide acts of this kind into different aspect even substantive dimensions. In a direct confrontation however both, motor and evaluation, are one movement.¹⁶⁹ Most important this is a quite common even trivial form of action not involving purely mental capacities.¹⁷⁰ The point is that all this fits mundane settings; there are no mysteries involved.

From being to having

The new perceptive cognitive perspective going with a different ways of handling elements results in a technical proficiency in turn reinforcing the development of the perspective mentioned. It is another mode of being in the world by which the hominin starts to experience itself from the species most akin. Manipulation of instruments changed the perspective from *being* a world into *having* one. With the actual complexity of the human into account, it would not surprise that the content of this suggestion would be judged as being all too simple. Agreed, the picture human behaviour and capabilities demonstrates is quite intricate. But all things considered the character of this type of intricacy has a lot in common with the impression offered by fractals: in principle quite simple but after endless application this simplicity is getting out of sight only leaving a confrontation with a very complex depiction.¹⁷¹

The type of the interventions described is on the same level as the basic skill needed for cycling, coming down to two fundamental abilities: finding and holding balance and moving forward. The similarity is striking. Obtaining balance goes hand in

¹⁶⁹ The mason estimating the right number of bricks has been given already; a form of tacit intelligence discussed by R. Dreyfus and by Polanyi.

¹⁷⁰ Morgan's canon or Occam's razor are appropriate here "one has not to assume more mind than necessary", if it can be done without...

¹⁷¹ Hurford gives the example of playing the piano (2014:74). Reduced to its elementary level it is indeed extremely simple, despite that it can result into extraordinary results, a matter small variations and technical skills.

hand with moving forward, the one cannot without the other. For the subject discussed in this contribution there are also two components: configuring input into a clearly distinguishable unit requiring a perspective of distance, phrased in terms of mental abilities a stance of consideration. Here too the one cannot be thought without the other. And strikingly both cycling and objectification are mainly perceptive-cognitive and motor adaptations in a changing environmental setting. In the first case from bipedal to rolling as mode of locomotion and from locomotion on all fours to an erect bipedal position in the second, both instances against the same material circumstances, a change in the environment¹⁷². So this comparison is not all that bad.

Concerning the argument of simplicity, what to think of Boolean algebra based on the values true and false and the operations “and” and “or”? This in itself is extremely uncomplicated going back on two extremely simple conditions: switch on or switch of. It however offers the blueprint and the steppingstone onto the realm of computation, computers, internet...

Disposing of a clearly delineated unit which can be distinguished from other equally clearly delineated entities is the necessary condition. That is exactly what is shown in the tools such as the Acheul handaxe.

Whatever caused the coming into being of this characteristic the fact that it is only observable in the development of a particular line (group or branch) of hominin signifies the turning point, the onset into a particular direction of the development.

Time to resume

- On the most fundamental level relevance is given, it is so to speak identical to being alive itself.
- The particular characteristics of the body organize the way the meaning given can be brought to an end.
- In that respect for the hominin the hands play the key role.
- In other words, they specify the way the burdens posed by the environment are going to be negotiated.
- The abilities provided are initially the same as these of the great apes, however some recruit implements (chimpanzees) others do not or rarely (gorillas).
- In so far tools are used the strategies are similar: holding, hammering, poking, digging...

¹⁷² Corballis (1991) observes that apparently around 8.000.000 years ago a hominin walked into the tunnel on all fours while 4.000.000 a bipedal species appeared. This period is sometimes called the pleiocene gap.

- Artefacts found in large numbers testify that at a particular moment in evolution a branch of the hominin tailored the stone tools in a way (repeated and sophisticated) not observed in other species.
- Strikingly the items unearthed were clearly delineated, perceivable as **isolated individual units** in contrast to the Gestalt-type figure with diffuse borders and dynamic character.
- The type of interventions needed to produce that effect, well-targeted and repetitive, reveals a stance of **distance taking**, consideration and evaluation.¹⁷³
- This stance has not to be understood as a substantial ability or competence, a prerequisite without which the effects could not have been produced but, as a dimension of a particular way of approaching a situation at hand (the latter literally as well as metaphorically).
- The condition of event and organism *being* collapsed into one experience (centric) must have been transformed into a condition of an organism *having* a scene composed of manipulable entities perceived over there – at a distance. Having left behind the centric condition signifies the pivotal instance.
- The units mentioned express particular characteristics. They can be preserved, transported, manipulated and clearly discerned from other units filtered out by the same perception organizing pattern. Being clearly discernable is the first prerequisite provoking further development. The characteristics are inherent, not forcing into manipulation but being affordant inviting to that end. Diffuse Gestalt-figures on the other hand promote engagement but manipulation is of a different order.
- As the condition of being collapsed into oneness is called centric, the new condition lifting this being bound rather blindly could consequently be called off-centred or excentric.¹⁷⁴
- Already existing strategies such as the distribution of functions over both hands and the (particular) sequencing of actions can of course be continued but – most

¹⁷³ The following is a remark in the margin. This coming into being of an emerging perspective in which a stance of what could be called 'distance taking' is in order signifies probably the condition of being which much later would be called "Dasein" (Heidegger) or "pour-soi" (Sartre). The being of the cow adopts the mode of grazing. The grazing is characterizing how the cow is as being. The perspective characterized by distance (seemingly looking and judging from a distance) is the mode the being of the hominin which in the end will become human takes. In that sense being (Sein) is not opposed to being there (Dasein) meaning not forming a unity with the event at hand, but is the mode the being takes and which differs from the mode previously expressed.

¹⁷⁴ Sometimes also called allocentric, defined as the ability to imagine visual perspectives not centred on ego. (Wynn & Coolidge; 2016:2005) Observe that to my opinion the authors might be conflating two different conditions: a perceptive cognitive perspective reorganization and displacement. Allocentric in philosophical terms may be referred to as Archimedes position when tilting the globe. McWhinney opposes grounded to ungrounded (in Givon & Mall, 2002:239)

importantly - also find new opportunities in the perception of discrete entities defined by and affordant to the abilities of the hands.

- Making use of several discrete units is naturally implied in the changed relation to the environment. Increasing the reach of holding one item into the hand to the extension of posing one item into another and this distributed over several units is in that changed perspective neither problematic.

=> The resulting condition is that of a hominin characterized by a changed or reorganized perspective on the environment going hand in hand with an extended set of manipulations taking advantage of tools modified to improve effectiveness.¹⁷⁵ This stage could be called "the technical proficient hominin or following Leaky's wordings even ape".

It needs to be stressed that in this development nothing mysterious is going on. And if there is something deserving that label then it is about the circumstances underlying the changes mentioned – but by this entering the field of causes which is another story altogether. As repeatedly said the focus here is on what has changed, what are the characteristics, the opportunities becoming within reach and what are the fruits?

In the light of the development into humanization the conditions described are necessary ones. Without these there would not have been a development in the direction we are familiar with. They are the stepping stones, the affordances or the conditions of readiness for developments.

Being the necessary conditions they are however not sufficient for one of the most central characterizations of man: the ability to share declarative information or in its broadest form the transmission of culture.

The claim put forward is that self initiated experience of displacement in space and time offers the sufficient steppingstone. How can this be explained?

Levels of meaning

This is the right moment to take a different path.

In the Western tradition meaning seems to be something in the open which has to be acquired. As has been made clear earlier the idea defended here is that being alive is synonymous with relevance. The relevant figure is obtaining its phenomenal form on the edge of the chaos present on the one hand selected out by the primary motives and the abilities the bodily infrastructure the organism provides on the

¹⁷⁵ The goal is broad. Showing off for instance can also be understood as a valid goal.

other. In that sense the world as relevant appearance will be different for the ant compared to the one of the hominin.

Life equals relevance. A living organism is full of relevance from the very first moment.

Two levels have to be pointed out. In **the first** instance relevance stands in relation to the primary motives, the latter coming down to sustaining life and procreation.

The second level is intertwined with this. It is determined by the type and construction of the body. The cow is as any other organism motivated to stay alive. But the way it is getting around is determined by the construction of the body, its orientation and the abilities opened by the particular and species defined body plan. Man is no exception. Remarkable detail: however the hominin is akin to other ape species there are signs that the former started walking tall around four million years ago (Kanapoi region, Laetoli, mentioned in Stoczkowski, 2002:75). This changed the perspective on the surroundings quite drastically.¹⁷⁶ Not less important it freed the hands from the burden of supporting locomotion, hands which already were skilled in grasping and holding. They provide and organize in a prototypal way access to what was of importance in the environment. In that sense the motive determining the drive onto the world got specified by the abilities of the hand. Not all what in principle could satisfy hunger for instance appealed, but what the hands could grasp.

So the primary motives provide the **first** layer of meaning. The hands provide the second in that they refine the first by their selective function. This **second** layer is easily overlooked, disappearing unnoticed in obscurity. This is remarkable because in finding out what something unknown is we Westerners normally look at what it can do or what it can be used for. Not so in the case of the human. Blinded by the Greek heritage we focus on its essence¹⁷⁷. If man would have been approached as a thing unknown, then the hands would certainly stood out firing up understanding. In line with the most fundamental drive and with the embodiment abilities of the hands the tool supporting action appears as the **third** layer of meaning; meaning indeed as it comes down to the use of means.¹⁷⁸ The tool had initially a dedicated task consequently meaning. Not in the sense of a tool as a general category referring to any implement supporting action, but for instance as a particular scraper, not the general category of scrapers, let alone tools.

The fourth layer: meaning by association

¹⁷⁶ Recall Leroi-Gourhan in *Gesture and Speech*.

¹⁷⁷ "Ti esti ti" or what is that – that what is (referring to the unchangeable essence, the nature of it).

¹⁷⁸ I will at this point not distinguish meaning from relevance.

Accidentally the scraper could have been involved in another event of importance, killing an enemy for instance. The presence and moreover the presentation of it on another moment and in another location could have sparked a condition of reminiscence in the actor and others having witnessed that event. Based on association the tool in question acquired a semantic payload. This instantiates the **fourth** layer of meaning.¹⁷⁹ In itself a meaningful experience provoked by association is not extraordinary. An animal of prey picking up the smell of a predator or hearing the sound produced by one will also be fired up as if the threat was actually present.

So experiencing an imaginative content coming down to reviving a situation not actually present is not exceptional. What in the case of the hominin becoming human is exceptional then?

At this point the previous part of this contribution becomes relevant.

On the status of the object

The technical proficient hominin is characterized by reorganization of perceptive cognitive ordering focusing on clearly distinct – i.e. separate and on a distance - entities forcing the agent into a choice. Remember that this is not to be taken as an installed mental capacity but as a tangible presence provoking motor action in relation to the preferences of the need of the moment.

So there are clearly distinguishable units going with a condition eliciting to make a choice¹⁸⁰. Within the confinements of being grounded, bound to situations answered intuitively by existing heuristics and behavioural programs gradually the mentioned approach arose. A new way of negotiating the burdens of the environment got in place.

It is not superfluous to stress that the reorganization of the ordering giving perceptual pattern whatever the causes driving into that direction, is at the core of the new abilities. Without that pattern which today would be recognized and conceptualized as “object”, the advances would not have been possible.

Before listing up some of the new characteristics and abilities, the following observation should be made.

¹⁷⁹ There (at least) two more layers. The fifth is meaning by stipulation, a layer coming into being once the opportunities of displacement are fully explored and exploited. The sixth layer builds further on this by applying the methods of projection. It could be argued that stipulation is based on projection and so this distinction should not be made. This is open for discussion but not really of importance as these layers are however not relevant for this exposition.

¹⁸⁰ I am quite reluctant using the term “free” because it all too easy suggests a mental capacity – think of free willness as some quality existing in its own right. Again what is meant here if really low level: something being present, preference and motor ability.

Apart from some philosophers “object” is rarely considered to be based on an underlying pattern or a concept.¹⁸¹ It is tacitly taken as self evident even a natural type. The world is full of objects. It is the way it is, end of story¹⁸². However studies on the behaviour of animals¹⁸³, research in the domain of developmental psychology¹⁸⁴ and some cases of treatment of congenital blind¹⁸⁵, all provide strong indications that the object or more precisely the concept of object is a cognitive construct. The human has to learn to recognize¹⁸⁶ a particular configuration as something belonging to the category “object”, further to identify it as a particular type within that category. So the position defended here is not that exceptional. Alas taking the object as a natural given, the difference opening the insight made in this paper vanishes. The tacit assumption being that if there is no difference in that dimension between man and non-human animal, the germs underlying the human trajectory must be looked for in other directions. In combination with the assumption of taking seriously the existence of mental capacities¹⁸⁷ on the one hand and the mysterious fruits of the neural workings on the other, the deception is complete: the human particularity emerges from the workings of the brain as a Genie from Aladdin’s wonder lamp. While if the difference is taken seriously a range of characteristics until then not understood gains transparency.

It needs to be simple and elegant but not in all cases

This requires however that the building blocks in all their simplicity have to be taken serious. This is not said without good reason because the attitude of mainstream thinking is somewhat peculiar. In the natural sciences, the more simple an idea or a formula is, the greater the admiration. It is proclaimed as most elegant. Conversely when the subject has to do with the humanities, eyebrows are getting frowned accompanied by some mumbling that it is all so complicated, billions of neuronal connections taken as prime example. Boolean algebra as apex of simplicity at the same time the bottom line of all computing has been given¹⁸⁸. It falls back on

¹⁸¹ In The Stanford Encyclopaedia of Philosophy, the discussion on the meaning of object takes 60 pages. This might well be an indication that is not evident and probably somewhat problematic to say the least.

¹⁸² Take “Visual Object Recognition” by Grauman & Leibe (2011). Even a basic handbook like this seems to take objects as kinds given, the problem is the process of recognition.

¹⁸³ Mammals and hominidae in particular.

¹⁸⁴ Lockman (2000); Casler (2005); Simms (2008) to name a few contributions in this domain.

¹⁸⁵ Mike May for instance discussed by Huber et al. (2015)

¹⁸⁶ “To rephrase” so to speak the world imposed and molded under the pressure of the urging primary motivations into a different form also relevant but from a different approach.

¹⁸⁷ Goethe observes “Denn eben wo Begriffe fehlen Da stelt ein wort zur rechten zeit sich ein”. But once word became commonplace the quest for the corresponding entity is fired up. In that sense the search for the seat of consciousness is in full swing. One suggestion by a highly esteemed mathematician is that it might be emerging from the workings of still to find quantum gravitation fields in micro tubules. Hmmm.

¹⁸⁸ Quantum computers left out of scope here.

two states: true and false or in mechanical sense on and off and a few operators such as “and” or “or”. Think on the other hand of the highly complicated graphic scenes and computational capacities based on intermediate increasingly more complex computer languages. Philosophers might prefer another case as illustration. Take the introduction of the condition of immutability in the vicinity of the Aegean Sea around the 5th century BCE. It is about one uncomplicated concept¹⁸⁹ defining the course of the Western thinking in the meantime a dominant model around the world. This origin however has for most long been lost out of sight.

This point made, let us focus on characteristics, features and abilities going with or opened by the introduction of the “object” template.

The changed relation, characteristics and abilities

The most significant change occurred in the relation to the environment. Being absorbed in and by an event, a centric experience in Plessner’s terminology, made room for a relation to something in front of the agent, a relation of *con-front-ation*. That some-thing we call an object sounds more striking in German “die Gegenstände”¹⁹⁰. It expresses two aspects: first there is some-thing distinct and second it is situated over there at some distance. “Distare” as root for both meanings has been mentioned earlier. Both are exactly the characteristics of the template acquiring form in the explorative relation to the action supporting implement. It is important to remind that this explorative relation carries the germs of a condition which eventually will open the space to make a choice in first instance on the level of action, a condition which once projected onto more abstract contents will be referred to as being free¹⁹¹. It is at the same time condition, action and perspective. The naming only expresses a difference in the perspective when discussing this subject. It is the hallmark of a crucial difference in comparison to the species most akin. Their behaviour is cued¹⁹² either by the pressure of their needs or by events occurring in the environment. That is the **basic condition**.

But improving the tools also testifies of the inclination of taking initiative. This is akin to being able to make a choice on the level of manipulation. The latter needs to be stressed: the openness originates first and actually only manifestly on the level of

¹⁸⁹ Reference made to the transition of “hoti estin” (that it is) to “ti estin” (what is the nature of that what is?)

¹⁹⁰ Reference also made to Hegel taking “fur-sich” as the object finding itself in front of the subject or take the distinction between “pour-soi” and “en-soi” made by Sartre.

¹⁹¹ It has again to be stressed that this type of being free meaning in the first place “unbound” occurs on the level of action. The idea of being *free* as a psychic ability only comes much later. To my knowledge that can be observed with Zoroaster when good and evil changed from real life relations into qualities and with the realm of ideas by Plato.

¹⁹² It is tempting to add “(...)cued *rather blindly*”. But this would suggest that there would also be another condition “not blind by based on reflection” and this is a misleading formulation because in the condition of the non-human animal an alternative is absolutely not existing.

manipulation or action if taken somewhat broader. This level will provide the substrate for the much praised mental openness characterizing creativity and generativity taken as the hallmark of the human. This so called mental openness is realized through a mechanism of projection.¹⁹³ I have to limit myself here to only mentioning this dimension or realm of importance because it not only deserves a discussion in its own right, it would lead beyond the scope of this text.

Making a choice between in that particular case nodules, expresses a gesture of initiative. It is not something sprouting from out a mental capacity being present somewhere in the psyche. It is elicited by the context demanding action in the context of acquiring an implement in order to support further action.

At this point the hominin in question testifies of being able to **initiate** action **himself** instead of being heteronymous cued into it. This is a crucial moment of transition.

There is more. The implement not only gained a distinct shape, in the fourth layer of acquiring meaning it also functioned as a stimulus taking the place of the authentic event. According to Vygotsky it acquired the role of a **second order stimulus**. It leads to the effect of bringing reminiscence to life implying that it expressed something about the character of the event it referred to. Again two aspects are of relevance. First it expresses a relation of **aboutness** and second it brings an informational payload to life. Could that not be the basic pattern of what in linguistics is called a declarative¹⁹⁴ statement – rather *content* in the stage discussed here – about an instance?¹⁹⁵

All this is based on perceiving discrete entities instead of pure Gestalt-figures. The driving dynamics described by Gestalt-psychology are still present¹⁹⁶ but the forms taking the foreground are functions of the dynamics of manipulation serving the driving dynamics mentioned.

These forms, these objects can be conserved, transported¹⁹⁷ and manipulated. The latter has a special effect. Been compromised with an extra layer of meaning

¹⁹³ In my research leading to the core ideas expressed in *The Forgotten Transition* it was not all that difficult to sketch out how a holophrastic way of expression based on the manipulation of elements compromised by displacement could have been coming into being. But this had little to do with the sophistication of a full blown human language. This felt like an absolute abyss for quite some time. It changed by reading work on semantics, cognitive and grammatically, in which the mechanism of projection played a central role. (Lakoff, Johnson, Kittay, Langacker, Fauconnier to mention some authors working in that field)

¹⁹⁴ "The bulk of the grammatical machinery of human language is invested in the coding of declarative speech-acts". (Givón, 2001:32)

And Tomasello (1999:36, see also 2003) observes that supplying data about the repertoire of chimpanzees showing that their "signals" are restricted to the drawing of attention and to imperative gestures. He adds that in their natural habitat they never initiate the intention to give information about something (declarative).

¹⁹⁵ In this context two terms come to mind. Think of Charles Sanders Peirce defining a sign as something – some *thing* – standing for something else and Ernst Cassirer in turn defining a symbol as a sign enrobed in meaning.

¹⁹⁶ Reference to Redefining the object.

¹⁹⁷ In some production sites a massive amount of hand axes were found providing indications these were intended to be used elsewhere.

acquired by association, the manipulation of the implement implies the manipulation of the experience provoked, an experience characterized by a nature of displacement. In that sense **the “logic” of manipulation is transposed onto and mirrored in the structure of the joined chunks of displacement.**

In a nutshell figures start to show ever more bordered, becoming discrete and distinct from one another. Taken over by self initiated actions being heteronymous determined by the conditions of the moment fades away. These entities allow firing up reminiscences. They function as carriers of displacement. The structure in manipulating these carriers is mirrored in the structure of complex reminiscences. It takes over the perspective of distance and of declaring about.

Conclusion, the twofold aim of this essay

In first instance I wanted to do right to the role of the hands in negotiating the environment. Being first line their form and way of instantiating action sketches out the blueprint for further heuristics and operational steps. As such they are paving the evolutionary trajectory leading into what will characterize the human being in distinction to non human animals. However there are publications shedding light on the importance of the hands, the primordial and decisive influence is never fully stressed. To put it bluntly the type of knowledge and action characterizing the human is permeated by the scheme of mediated manipulation¹⁹⁸. And that in turn comes down to the presence, the form and the motor abilities of the hands. Converse without hands all this would not be possible, let alone thinkable making use of wording.

The decisive role of the hands deserves to be fully appreciated.

In second instance but not less important the spotlight got focused on the role of displacement and on the not mysterious way the dynamics and the effects of it can be thought. Able to manipulate on a self initiated basis manipulation of objects as carriers of reminiscence allow firing up imaginative realms. This enlarges the world within sensible reach in an exponential way. This ability is without any doubt a cornerstone of the typical human culture.

Not really a goal but through this exposition six layers of giving meaning were mentioned.

¹⁹⁸ Descartes and many others for that matter predetermined by the model in which God provided man with the capacity of ratio would not agree. Even Jerry Fodor (1975) suggested that mentalese preceded the form of language which could be captured by the senses. But how could language without word like elements could be realized? Are words then not things following the dynamics of manipulation which mirror these of the hands in the manipulation of tools?

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Consized format

The following is an exercise in reducing the content so far to its bare minimum, allowing quick overview. It originated in a different context: formulating the different steps as conditions of possibility in Kantian sense.

Foundational Reasoning

The perception of the Umwelt determines the range of possible actions within it. The axiom from which this analysis proceeds is empirical and undeniable: humans do things differently. The production of standardized stone tools is a primordial example. If action is a function of perception, then the human mode of perceiving the world must be fundamentally distinct. This divergence is traceable to the "first line" of embodied engagement.

Stage 0: The Shared Animal Condition

Biologically, humans are animals, and their foundational mode of being shares a core logic with all life. An organism is primarily driven by the necessities of existence. It meets these needs through the specific embodiment it possesses. Consequently, its perception of the Umwelt is a function of this embodiment in dialogue with its ecological niche (e.g., eye development in lightless caves). Against this background of primary motivation and embodiment, sensory input is configured into a meaningful form.

Two particularities are critical here:

1. The configuration takes the form of a Gestalt figure, where common fate or movement (Wertheimer's *Gemeinsamens Schicksal*) is a key organizing principle.
2. This figure is affectively valenced (processed by limbic structures) as favorable or harmful.

This process translates into a stance of relational regulation (*Beziehungsgefüge*, in von Uexküll's terms), which directly determines the type and direction of action (e.g., approach or withdrawal). The conditions highlighted here—primary motivation, embodiment, configured input, affective valuation, and relational regulation—constitute the dynamic system that makes a perceived, acted-upon world possible. This system defines "life" as an active condition in contrast to inorganic matter. It is the universal, shared substrate and the enduring foundation for all subsequent evolutionary developments.

Stage 1: The Technically Skilled Hominin

The tools produced by certain hominins, such as the Acheulean biface, represent a dramatic qualitative divergence from the tool use of related species. This is not a trivial observation but the crucial empirical fact from which theory must proceed. The standardized, symmetrical form of such a tool is a tangible symptom of a complementary shift in the organism's operative stance.

This shift is inadequately captured by the narrow, post-17th century concept of "cognition." It refers more broadly to a general stance of the organism encompassing interpretation, evaluative appreciation, and sensorimotor readiness. The novel artifact irrefutably signals a radical change in the mode of being-in-the-world—a change relative to a prior condition and to contemporaneous species that persisted in the earlier mode.

From the characteristics of these tools, we can infer several key features of this new stance:

- Affordance-Based Perception:

It expresses a heightened sensitivity—on both perceptual and motor levels—to specific formal properties. These properties afford (Gibson) manipulation by the grasping, holding hand. This is a primordial form of *Zuhandenheit* (Heidegger's "readiness-to-hand"), not yet tied to a highly specific function (like a pen) but answering the needs of a primarily motivated, embodied agent.

- Motor-Centric Logic:

Contrary to the common assumption that vision guides action, the relationship here is often reversed. The organism actively looks for what the hand can handle. Through this process, a configuration of stable formal characteristics gradually consolidates into a template of manipulable entities—a "concept" not in an intellectual sense, but one forged through embodied, dynamic experience.

- The Genesis of Mediated Manipulation:

Two action dynamics merge. The hominin uses its hand to select and grasp an implement to perform a further action. Action thus becomes mediated through standardized means. This template of mediated manipulation is the fundamental, omnipresent feature distinguishing human behavior and underlies all further development. Crucially, it remains embedded within the primary motivational drive, creating a duality: the event-dynamic of the immediate need coexists with the stable, formal configuration of the implement.

In conclusion, the tangible tools are complemented by a perceptive-cognitive reconfiguration—**objectification**—arising from actions in the public arena. Mediated manipulation becomes the basic template for negotiating the Umwelt. **This is how humans "do things differently.** (recall R. Leaky)

This reconfiguration entails further specifications: it implies a stance of distance (in selecting raw materials) and judgment (in evaluating modifications). These are not separate features but intrinsic dimensions of the selective and reconfigurative process itself. Distance and aboutness are only separable in retrospect by an analytically minded observer; in the act of objectification, they are two aspects of a single, integrated move.

Summary: The conditions enabling the technically skilled hominin are:

- 1) the objectification of the gaze, as part of a general reorganization of action into mediated manipulation; and
- 2) an integrated stance of distance and aboutness.¹⁹⁹

Stage 2: Displacement as the Stepping Stone to Narration

Sensory input that serves a primary motivation is intrinsically relevant; if it were not, it would not register as salient input. Food is relevant to hunger. Inanimate means (tools), however, are not themselves motivated. For them, the concept of "relevance" is inappropriate; we must instead speak of first-order meaning—the original, purposeful function for which they were configured. The meaning of a sharp-edged flake is to cut carrion; a pointed stick's meaning is to dig tubers.

A pivotal shift occurs when such a tool is involved in a singular, high-salience event—for instance, accidentally being used to kill a threatening predator. This moment, laden with intense affective tension, forges a potent association. Consequently, the later presentation of the tool can forcefully impose the memory of the event upon the experience of those who witnessed it. Here, the tool acquires the function of a second-order stimulus. The reactivation of memory is not, in itself, unique; many animals form powerful associations. The critical innovation lies in agentive, self-initiated displacement. The hominin, by the act of showing the implement, can intentionally provoke a displaced experience—an evocation of a past event in a different time and space—both in themselves and in others.

¹⁹⁹ In a later stage characterized by the ability to realize displacement in the experience, the feature of aboutness will come reflected in the term "declarative".

This capacity for self-initiated experiential displacement is the core of the innovation and a crucial step on the trajectory toward becoming human.²⁰⁰ It is a rudimentary capacity, analogous to striking a single musical string. Yet, just as combining strings in varied sequences produces complex music, combining multiple such displacements—evoking and recombining different remembered events—allows for the construction of complex internal scenes and, ultimately, narratives.

The Transformational Integration

The previous stages have been described sequentially, a necessary but artificial representation. The true evolutionary dynamic is one of transformational integration. The novelties of stages 1 (objectification/mediated manipulation) and 2 (agentive displacement) do not merely sit atop earlier conditions; they mix with them and exert a transformative effect on the foundational, shared animal mode of Stage 0. This process involves complex effects like substitution and sublimation, which, while significant, are outcomes of the new system rather than conditions for its possibility and thus lie beyond the scope of this foundational outline.

There is, however, one further development that acts as a crucial condition of possibility for fully modern thought and language. The ability to provoke displaced experiences allows for the expression of straightforward narratives—accounts of events elsewhere or else-when. But what of more abstract, evocative expressions such as "he promised golden mountains," "the task was above his powers," or "the camel is the ship of the desert"?²⁰¹ These transcend direct reference. This expansion from a prototypical language of reference to a full-blown symbolic and analogical system has been compellingly explained by the theories of conceptual metaphor and blending (Lakoff & Johnson; Fauconnier & Turner). These cognitive operations allow holophrastic or simple referential expressions to be "lifted" into the complex, recursive syntactic structures characteristic of modern language.²⁰²²⁰³

It may be observed that this addresses semantic and conceptual complexity but not the formal system of syntax. For that, one can turn to proposals like the Minimalist

²⁰⁰ On the importance of the introduction of the ability to bring forth narratives, reference to *Storytelling setting the human apart*.

²⁰¹ For ideal instances such as golden Mountains, see von Meinong for further elaboration.

²⁰² For Lakoff and Johnson; 1980. *Metaphors we live by*"; for Fauconnier and Turner; 2002. *The way we think*". There are many other who contributed to this project such as R.W. Gibbs; 1994. *The poetics of mind* and, Zoltan Koveces, 2000. *Metaphor and emotion*.

²⁰³ For a critical approach on how language could come understood, reference to *Defining language* (Documentation)

Program (Hauser, Chomsky, & Fitch), which seeks to reduce the computational machinery of syntax to a much simpler, potentially innate core.²⁰⁴

It is noteworthy that this search for a foundational generative grammar finds a striking parallel in the search for a "grammar of action" in stone knapping, as both endeavors seek the minimal, generative rules underlying complex, species-typical behaviors.

One Final Observation:

This stage has been defined by the novelty of displacement. While accurate, this term is potentially too narrow. As the mundane statement "I see a bird in my garden" demonstrates, the same underlying cognitive architecture of evocation and reference is at work even when the referent is perceptually present. This suggests that the core innovation is not displacement per se, but a more general capacity for referential representation—a topic that warrants separate, detailed elaboration.

Interim Conclusion:

Toward a Transcendental Grammar of the Human Condition

It is instructive to place this enterprise in perspective by recalling its initial motivation. This inquiry originated from a critical engagement with the Kantian project, which sought to illuminate the a priori conditions of possibility for human knowledge.

From my perspective, Kant's seminal approach, while profound, did not achieve the universal anthropological status it claimed. Instead, it appeared to systematize the epistemological assumptions of a specific cultural and historical moment—that of Enlightenment Europe. This led me to ponder a different question: drawing from long-term research into the constitutive features of human existence, how might one formulate what Kant's followers might call a transcendental grammar? My focus, however, would not be limited to the conditions of knowledge alone, but would expand to encompass the conditions of possibility for the overall human condition, within which knowledge arises as one particular manifestation.

The preceding exposition has sketched the contours of such a grammar, grounded in a universal anthropological framework. The stages described—from the shared animal mode of relational regulation, through the technical objectification of the world via mediated manipulation, to the agential displacement that seeds

²⁰⁴ Hauser, M.D., Chomsky N., Fitch W.T. 2002. *The faculty of language: what is it, who has it and how did it evolve?* Science, vol. 298, 22 nov., pp.1569-1579. For the contribution of J.F.R. Gilbert: Documentation sub *Grammar of Action and human cognition*; and also a critical comment in *An anthropomorphic perspective onto a grammar of action*.

narrative—are not culture-bound. Indigenous peoples also engage in technical objectification; their actions are equally structured by mediated manipulation; they, too, use material tokens as second-order stimuli to provoke displaced experiences and compose narratives. This grammar seeks the phylogenetic and existential bedrock of what makes us human, prior to any cultural superstructure.

A key result of this project is the demonstration that there is not a single, monolithic set of conditions, but rather several, nested layers: the foundational conditions of the animal mode (Stage 1), upon which are built the novel conditions introduced by hominin evolution (Stages 2 & 3), which in turn transform the possibilities of the whole.

One final analytical task remains: to shed light on the particularities of the Greco-Western lens through which the problem of knowledge itself has traditionally been framed. To call this a "bias" would be misleading, as it implies the existence of a neutral, unbiased alternative. In my view, no such alternative exists. The framework presented here and the Kantian epistemological project are different in kind. Ours begins with the human as a biological entity, an animal in the world, and derives cognitive possibilities from this embodied, practical engagement. Approaches like Kant's, in contrast, take the refined products of cognition—concepts like the synthetic a priori or analytic judgment—as their primary material, analyzing the logical architecture of a mind already presumed to be a "knowing subject." These are distinct starting points yielding fundamentally different philosophical anthropologies.

The following section will, therefore, outline a few of the most crucial historical and conceptual factors that directed the Western tradition toward its specific interpretation of knowledge. The goal is not a comprehensive history but to offer a glimpse into the directive circumstances—themselves a kind of historically situated "condition of possibility"—that underlie mainstream Western beliefs about what knowledge is and how it is possible.²⁰⁵

Stage 3 - Conditions of possibility giving form to a Western interpretation

The present project focuses on how thinking i.e. bringing forth knowledge is at all possible. Looking at the way Kant organizes thoughts according to formal characteristics – synthetic analytic, priority posterior, empiric rational – it will become

²⁰⁵ For a more extensive overview, reference to "Excerpt of a brief history of mind in Western culture" listing about forty particular historical scenes influencing the interpretation of what is going on in the world

clear that the semantic content of the thought is the basic material focused on. Consequently it does not explore how thought at all is possible but once thought exists how to classify these. It could be argued that Kant in first place points out the function of the mind as the designer of input into thought but also as source as in the case of mathematics. That position fosters a mechanistic model in the background, observing an effect – the thought – consequently assuming that there has to be some source and the most likely never doubted candidate is the mind. Realize that this is a concept for which the substance seems to evade all observation. In short in his setup the only stuff to work with is the already existing thoughts which he categorizes on the basis of the semantic payload and he finally attributes to the workings of a shadowy mind. In all this the semantic payload is the only observable material present.²⁰⁶

But the said semantic payload does not appear out of thin air. It is embedded in a larger frame of reference, a particular storyline neither rising up from thin air. That storyline came into being under the pressure of historical circumstances. By way of illustration, a few will be mentioned below.

Submission

The story of Gilgamesh introduces a particular way of relating to the Umwelt. For a start an animal is in an unreflected way part of the Umwelt, interwoven with the fluctuations occurring in the field of perception, a condition in a sense akin with the assumed experience of life by hunter gatherers. But the story of Gilgamesh offers a different vantage point, that of **submission** of the Umwelt. This stance finds continuation in the Semitic set of beliefs and from there in the book of Genesis “Let us make mankind in our image...and let them rule over the fish in the sea... the birds in the sky... over all the earth.”. This is not a just so anecdotic reference but it expresses a fundamental stance of the Western culture different to other cultures. Confucianism does not advocate dominion but alignment with the heavenly order; Daoism promotes participation with nature; Hinduism stresses serving the Earth and for Buddhism all is sacred. It should come realized that this is a dramatic change in the relation with – from then on ‘upon’ – the Umwelt.

The introduction of the recognition of an experience which will become coined “having a thought”

²⁰⁶ This is in a sense on par with the approach presenting “objectification” as the invisible complement to the observable difference in the make of tools. However among other things, research in the domain of developmental psychology has shown that the perception of input into the guise of an object has to be learned; i.e. acquired under the pressure of group education. It testifies in a sense of firm ground while the mind which Kant refers to remains to be an instance of hot air, nothing more than a conceptual construct.

The very first sense in which language is to be understood comes down to a way of behaving in given circumstances, a way of dynamically being present, pure and simple. It also has a performative force like in uttering a curse or a blessing. The depiction of language as a dedicated mode of transferring information is a modern interpretation. Consider Locke viewing it as a tool to convey ideas; Locke lived however as recent as the 17th century

Returning to the first condition,

According to Richard Parry (2014) this single move of language of a way of being in the world became split in the following way. In pre-Socratic times the terms *techne* and *episteme* were interchangeable. Parry describes that physicians explained their interventions to the patient in order to gain cooperation. As such the explanatory dimension shifted away from the global intervention and with time became considered an instance existing in its own right. While *techne* referred to the tangible intervention, *theoria* acquired the status of some kind of ethereal instance. The idea of a thought as an instance in itself – as a novelty – became by this part of the common sense understanding. This is important because it provides the – albeit ethereal – concept on the way to the introduction and recognition of something like a mind and of a thought laden with meaningful content. Contributing and further supporting the acceptance of ethereal instances as being (almost) natural kinds. In that respect consider also the role of money, writing and Zoroastrianism.

The introduction of the invariable – the quest for the essence

Geoffrey Lloyd explains that around the 6th century BCE in the region around the Aegean Sea the idea of nature as an invariable yardstick appeared; hence the denomination of the followers of that idea as philosophers of nature. But nature should come understood as the most fundamental character of that what is (present) in the same sense as of ‘what is the character of X as a person?’

So far for the introduction but the interesting and decisive step occurred with the question of what was the character of that what invariably was. What is the nature, the essence of that what is? This would become the basic template underlying all contemplative thinking occurring in the culture which would spread out over the West. And at this point it is that knowledge as core subject enters the stage. Because, the quest into the essence of whatever is, should provide an answer i.e. knowledge. Consequently what has been called the basic template materializes as the search for knowledge. The urge to know lies at the heart of being in the world. It is for that reason that the late Richard Rorty claimed that the West was obsessed with knowledge.

All the versions suggesting the essence; thought out by the early philosophers of nature such like water, earth, fire, the continuous changing, the never changing, the ideas etc. can be understood as efforts to provide a proper answer to it, to unveil knowledge. The idea held by some even to this day of science as mirroring the true guise of nature is but one attempt to satisfy this endeavour. Like the stance of domination on the world and all what is in it, the quest for knowledge too is a major determinant giving orientation to the relation of the Westerner and the world or nature.

The influence of optics on the domain of research

In The Assayer Galileo stressed the importance of the workings of the smallest of constituents hidden deep in the organism. This not only reorganized the focus but did that in a cause effect scheme. The English physician Willis, living in the same era, shifted the focus of importance from the heart into the direction of the brain. The combination of both set the stage for the importance of the workings of the smallest parts hidden in the brain; an endeavour which can come recognized in the contemporary interest in the workings of the neural tissue.

Population concentration, division of labour and the rise of self control

The increasing urbanization and the division of labour promoted the suppression of extravert behaviour which as such became subject of control, more precisely self-control.²⁰⁷ Keeping emotional impulses for himself in turn facilitated the introduction of the idea of some condition coined an inner life which he could hide from the public eye. This in turn reorganized the ordering of the house, once open now closed and provided private rooms accessible by corridors. The existence of an inner private life became accepted as the natural condition. Later again it offered the steppingstone in the acceptance of the unconscious as important impetus of moods and behaviour.

Concluding stage 5

The scenes offered described a developmental line starting from a condition in which the human was part and parcel of the fluctuations of the natural and social Umwelt – the period of Uruk and Ur for instance - into a condition in which the concept of a thought became cornerstone to the further acceptance of a such thing like a mind. In time this instance would become housed in the inner private realm hidden for the public gaze. Another development is also of major importance. The

²⁰⁷ Worked out by Norbert Elias in *Über den Prozeß der Zivilisation. Soziogenetische und psychogenetische Untersuchungen* (1939), translated in multiple languages.

introduction of the concept of the invariable provoking the quest into the nature of it, has lain down a to the present day dominant way of understanding of the world, at least in a particular part of the world.

Kant's Project in Context and the Core Argument

It is against this historically constituted backdrop that Kant's critical project acquires its specific meaning and necessity. At a particular juncture, the ancient philosophical quest to understand the nature of being was plagued by profound scepticism regarding the conflicting claims of rationalism and empiricism, to the point where confidence in the very possibility of knowledge was threatened. Kant's "Copernican turn" offered a spectacular solution by investigating the mind's a priori contributions to experience. Yet, the very brilliance of this solution threatens to veil its own encompassing frame of reference. The endeavor to define and secure knowledge is itself an expression of a deeper, culturally shaped drive toward total comprehension and mastery—a lineage traceable to foundational narratives like the Epic of Gilgamesh or Genesis. More precisely, it is an attempt to answer the question of the essence of knowledge. This approach tacitly accepts the "mind" as a natural given—an entity whose existence, often linked to an ethereal "thinking substance," is seldom questioned. Its focus rests overwhelmingly on the semantic payload of thought (concepts, judgments, truths) and the logical relations between them, rather than on the necessary operations and embodied history that make the activity called "thinking" possible in the first place.

General conclusion

The preceding analysis clarifies that a comprehensive understanding of the conditions of possibility for the human condition—and for knowledge as one of its manifestations—must focus on three constitutive levels, each with its own set of enabling conditions:

1. The Biological-Animal Foundation:

The primary, shared mode of being-in-the-world, characterized by motivated embodiment, affective valuation, and relational regulation.

2. The Hominin-Specific Innovations:

The evolutionary developments that radically altered this foundation, primarily objectification (via mediated manipulation) and the capacity for agentive, displaced experience, which together provide the scaffolding for narrative and symbolic thought.

3. The Cultural-Historical Framing:

The specific symbolic systems, narratives, and epistemic frameworks that shape a community's understanding of the world. While not a stage in the phylogenetic sense, this level is equally constitutive of human experience.

Critically, attention must also be paid to the reciprocal influence between these levels, as each transforms and is transformed by the others.

This represents a radical shift in perspective, requiring an integrative approach that bridges evolutionary biology, cognitive archaeology, and philosophical anthropology. The broader composition from which this summary is drawn provides that elaboration. The present, condensed format aims to distil the core argument into a standalone contribution that also serves as the conceptual keystone for the larger project.

Toward a Transparent Description of the Human Condition

Pursuing this line of inquiry allows us to sketch a basic, transparent template of the human condition:

The primary motivation of the moment translates into the drive, direction, and intensity of existence. Embodiment opens specific capabilities that demarcate the form and character of what is perceptually relevant—a function of that motivation—and thereby determines the phenomenal guise of the Umwelt. This is the dimension we share with all living creatures.

Within this shared condition, the human lineage developed a unique skill: the use of implements in a way that provokes and structures experience itself. This activity gives rise to a particular, reflexive stance toward the world and, crucially, toward the self as an experienced phenomenon. One could say the human instantiates the narrative content it brings forth. This narrative—woven from displaced experiences, cultural symbols, and shared meanings—becomes the lens through which the world, society, and the self are understood.

From this follows a decisive clarification: what is commonly called the "mind" is not a mysterious, pre-existing entity of an esoteric nature. It is a placeholder label for the effect provoked by a particular set of sensorimotor and symbolic skills. It is akin to a signpost pointing not to a metaphysical destination, but to the operational capacity that generates certain lived experiences.

To caricature the point: the human life-world is, in significant part, construed by imagination yet taken for reality. Humans live predominantly within an imaginative staging that is apprehended as reality.

This conclusion, of course, inevitably questions the very status of "reality"—a question that is not a defect of the human condition but its definitive and generative ground.

Not the end yet

The preceding synthesis represents a pivotal moment within the entire exposition. The technical and evolutionary analysis has reached its logical conclusion. We began by establishing the foundational, shared animal condition—the necessary background against which all divergence must be understood. The first decisive divergence was traced to the liberated hand, whose logic as the primary interface began to determine the very contours of affordance, reorganizing the perceptual world into a field of manipulable entities. This reorganization is so complete for us that we mistake it for the natural state of the world. A subsequent, critical step was the emergence of the capacity to agentively provoke displaced experience through the use of such implements. This capacity provided the raw material from which, over time, complex narratives could be woven. These consecutive stages—objectification via the hand, followed by referential displacement—constitute the fundamental milestones in the phylogenetic trajectory that produced the human condition.

From a strictly technical, causal perspective—tracing the material and cognitive prerequisites—the developmental account is complete. The engine is built; the core operating system is installed. What remains is to contemplate the nature of the reality this system generates and inhabits. We now shift from asking *how this condition came to be* to examining what the mainstream narrative entails: the existential, cultural, and philosophical realities that bloom from this technical root.

3 Enacting the storyline – the semantic dimension

The narrative is not only a technical realization, it also has content and that is of cardinal importance as the content expresses even organizes how the world is understood from which responsive behaviour follows.

In short, the stepwise technical development represents the conditions of possibility for the narrative to come into being while the content of the said narrative allows understanding the world by this guiding behaviour.

This provokes two further questions:

1. what is the character – the nature, the status of the narrative?
2. what is the content which can become observed?

1. On the character of the narrative

At the start the meaning of this could come somewhat enigmatic but it will soon become clear what is meant.

Let's start with Locke who in 1689 wrote "An essay concerning human understanding" among other things arguing that the human mind in origin is a blank slate which gradually becomes filled and take form through real life experience. That idea has not all that long ago become fiercely criticized by Steven Pinker advocating the suggestion of a proper human nature (The Blank Slate, 2002). That would consist of a set of predispositions as for instance language and morality. I agree that over the course of the evolution from hominid to human pre-adaptations must have been taking form (knees, hands, larynx, pelvis, teeth etc.) These are changes through practice, maybe even by mutation which from another perspective could become understood as pre-adaptations. But whatever, language and moral are of very different order. Findings in the field of developmental psychology and the study of feral children show that if no education in a human social context occurs, language and morality do not develop, better said, these faculties are not becoming imposed.

Concluding, Locke's suggestion may at first glance come all too straight forward, he in the end got it right.

This educational process has by Wittgenstein in "The Philosophical Investigations" been discussed in that context coining the result the "Lebensform". It consists of the set of cultural and familial beliefs transferred in from day to day life; taken to be natural, mirroring or expressing how things without any form of questioning really are. It is not a considered appreciation of how nature possibly is; it is nature! This is

what philosophers consider naive realism but in its most absolute form. The social psychologist Milton Rokeach in his 1960's publication "Open and Closed Mind" schematized belief-systems as having a core, an intermediate and a peripheral zone. While beliefs in the latter zone were quite prone to influence hence changeable, the core beliefs were absolutely not.

These beliefs can ultimately become changed by brain washing techniques but in normal conditions they collapse with what is considered the identity of a person.

This basic belief-system offers an interpretation of the experienced world. It is how the world and all what is going on in it is getting understood without questioning. It is proper to a group or rather a hierarchy of groups going from the nuclear to the extended family, from social, political, professional and religious organizations; the basic convictions in all their convincing simplicity fostered. It is obvious that groups have somewhat different understandings, let alone large scale cultures each offering a somewhat or probably radical different "grand story" often even taking the format of a complete cosmology.

By way of illustration, let us offer a glimpse on that diversity.

At this point the second question becomes relevant

2. What is the content which can become observed

Some caution is in order. As Westerners we tend to consider the home set of beliefs as the natural and default way of understanding the world. We should however be aware of the fact the version fostered in the West is not only a version moreover a version amongst others. The fact that it is extremely successful in negotiating nature does not justify to infer that it mirrors in a one on one relation how nature as it is in itself really is supposed to be. Hawking and Mlodinow strikingly observed that even science in its most esteemed guise only works with models, nothing but models.²⁰⁸ Concluding: we should step back and treat other versions with exactly the same respect as we do with the Western version. Understanding and negotiation (scientific intervention) are two different subjects.

Some cosmologies as illustration

Animism like practiced by the Dogon people in Africa, Maori in Oceania, the Ojibwe in North America and the Kalash in the Philippines.

²⁰⁸ Hawking, S. & Mlodinow, L. 2010. *The Grand Design*. Bantam Books.

Agency and personhood come attributed to animals, plants, woods, mountains, rivers even dynamic occurrences like rain and wind and volcanic outbursts. Not only the human possesses a soul, all does.

Entanglement with nature. In the West the human is considered an encapsulated atomic unit encountering other units of the same kind. Entanglement views the self as part of a larger whole in which all centers in a sense are equally animated and sensible for communication. For contemporary Westerners hunting is making use of game as commodity. In the sphere of entanglement the animal hunted is a companion deserving respect in an interactional tension. In the West nature and all what is in it is considered a commodity to be used the problem being finding methods of exploitation. In the sphere of entanglement all bears the character of being animated.

Dharma present all over the Far East.

It refers to a cosmic law in which all is connected and interdependent. Because of this, bringing harm to one element in the end returns on harming oneself. This promotes Ahimsa or non-violence and compassion making nature a locality of spiritual practice. Life equals the duty of supporting the welfare of all what is.

Tao also in parts of Asia.

The universe is a constant flow one should align with in a particular way called Wu-Wei meaning effortless action sustaining harmony. Very contrary to the competition and attitude of exploitation in the contemporary West.

Ubuntu (Africa, Xhosa)

Here again the emphasis is on the whole also in time as the ancestors are part of it too. This view also occurs in parts of Asia (Vietnam for instance). The land is held in trust for the ancestors and future generations making some parts as meeting places sacred. The health of the people goes hand in hand with the health of the land. A similar concern occurs in the community of native Americans. Observe that the said land is not a inert material instance but animated and vital.

The importance of the dimension of **dreaming** (Australian Aboriginals)

During dreamtime ancestors journeyed the land creating all aspects of life. It instantiates an eternal living present. Consequently the land is the sacred testimony of their activity. Being part of this one can connect even more directly by rituals and

chanting. Quite obviously the land can not be object of property because one is part of it. One collapses with and instantiates that order.

Some references

The following books could serve the inquisitive reader.

- Claude - Levi Strauss; *The savage mind*
- E.E. Evans Pritchard; *Witchcraft, oracles and magic among the Azande*
- Jack Goody; *The domestication of the savage mind*.
- Steven Feld; *Sound and sentiment (on the Kaluli in Papua New Guinea)*.
- Eduardo Kohn; *How forests think: toward an anthropology beyond the human*.
- Philip Descola; *Beyond nature and culture*.
- Tim Ingold; *Perception of the environment*.

These sketches referring to other cultures should be taken serious. They are more than just so snapshots. I witnessed the seriousness of ancestral presence to nine generations back in Vietnam and in Indonesia where the Toraje people treat mummies as still present creatures. Visitors of Bali observe the presence of places of sacrifice part of every home and even in the street on the ground. In Spain and Portugal churches are full with praying believers and more than often people can be seen praying in front of chapels on the corners of streets. These are not just so stories. They are taken serious by the inhabitants and as Western skeptics we should appreciate that fact – even if we ourselves do not adhere these beliefs.

The Western Interpretation: A Specific Narrative Configuration

The anthropological grammar outlined thus far describes a set of universal potentials. Their historical instantiation, however, yields radically different cultural configurations. A dominant one, which has come to define the modern West, can be characterized as follows:

The person is conceived as an encapsulated, atomic individual, fundamentally in a relation of potential confrontation with other such atoms. The world, including other persons, is apprehended as a set of commodities—entities defined by their utility within an instrumental calculus, even in the domain of social relations. The individual is a composite of body (public, observable, mechanistic) and mind (private, hidden, residually immaterial). This subject stands under the authority of analogous frameworks: a personified God, the impersonal laws of nature, and social mechanisms like the "laws" of the free market. Reason is posited as a disengaged,

context-free faculty, a tool for calculation and mastery. The cosmos is correspondingly viewed as a quantifiable reservoir of resources, and a prevalent belief holds that science can, at least ideally, mirror nature as it is in itself.

This is, of course, merely a sketch of a complex historical formation (a lineage richly analyzed by thinkers like Charles Taylor in *Sources of the Self*).

The Central Question

This leads to the central, genealogical question: how did this specific narrative configuration—so different from the animistic, relational, or ancestor-based cosmologies of other human groups—come into being? What concatenation of historical, economic, theological, and philosophical circumstances determined this particular storyline? It is crucial to stress, once again, that from a technical-anthropological perspective, this worldview is itself a narrative, a constructed "imaginative staging" coined "reality", ontologically no different in kind from any other, though vastly different in content and consequence.

Because this narrative now dominantly shapes our global institutions, our ethics, and our relationship to the planet and to each other, it is of paramount importance to subject it to the same kind of analytical scrutiny we have applied to the origins of tool use. Illuminating the historical conditions that made this specific "interpretive lens" possible—and which now make it seem inevitable—will be the subject of the final part of this inquiry.

Sketches on the history of Western thought

In the original form, the following became called "tableaux vivants" because this is not a fluent report but indeed a list of scenes each demonstrating a particular feature. Like pieces of a puzzle these would in the end bring forth a coherent depiction. Observe that these are but sketches. Each is subject of in depth study.

In order for a good understanding it is recommendable to browse the part on **mythopoeic thinking**. This precedes the changes which will come discussed further.

Early Greek mind related concepts

Neither the Iliad nor the Odyssey (8th century BCE) refer to some instance which today would be understood as personality²⁰⁹ or as mind. The whole realm of something mind-like, so evident to us, did not occur.²¹⁰

According to Snell (1982) the body got experienced as interplay of different forces in the same way the environment is getting experienced. Heidegger refers to Parmenides, 6th century BCE, in whose thinking being (einaí) and the thought (Das Vernehmen) collapse into one, aletheia or that what is not hidden showing itself.²¹¹ Terpander, a poet living in the 7th century BCE, begs the phrenes to compose a song. Situated in the region of the diaphragm these are involved in planning. Another poet from the same period Archilochus speaks of his thymos (passion, desire, agitation) as a weak soldier submitted to forces thrown down to the ground. All these forces are approached as if they were another person.²¹² Alcmaeon of Croton, a pre-Socratic philosopher is anxious to know about the nous of the other. This refers to a clear perception, watching, seeing, recognizing.²¹³ Sappho of Lesbos a female archaic Greek poet expresses that love has an onerous effect on the thymos at the same time shaking the phrenes. Thymos, phrenes and nous, all ended with death.

Blood and breath were the prototypical signs of life and were caught by the term psyche, an interpretation common up to the 5th century BCE. Soma did not refer to the body but to a corpse. After death without the capability of the body the psyche or phusys was crippled, deprived of feeling, thought and the ability to speak. The burial of the body was necessary in order for the phusys to pass over the Hades. Remarkable detail: woman, children and young man under the age of adulthood never got buried in the ritual right way so their phusys never crossed the river.

So far for a few examples feeding the impression of a life experienced as a stream of forces and matter in a concrete tangible fashion not akin at all to a thin air like dimension. The idea of some mind like realm was still far off.²¹⁴

²⁰⁹ The first signs of taking emotions into account by this referring to a person, can be dated around 5th century BCE when the epic style of narrative got supplemented by a lyrical one. However emotions in that period should rather be understood as passions. The secularization and naturalization into the meaning of emotion as understood today only took place in the 17th century. (Makari, G. 2016. The Soul Machine (...))

²¹⁰ For a thorough discussion on the subject of the history of the mind, Erneling C.E. & Johnson D.M. (eds.). 2005, in particular chapter 2 by T.H. Leahy; A historical philosophical exploration. Of course the basic work of Bremmer may not be overlooked (1983).

²¹¹ Reference to the work of C.H. Kahn on the meanings of the verb "Be" in Ancient Greek. 2003. Hackett Publishing

²¹² A man no longer moving, i.e. died, his thymos has left him.

²¹³ According to some "noös" originally referred to the nose and the sense of smell as faculty of identification.

²¹⁴ What got offered was extremely fragmentary only meant to illustrate a certain point of view. For a fascinating and in-depth exploration see for instance the publications of Snell, Onians, Nisbett, Cromer, Lloyd, Parry, De Ley

A change in attitude, from dynamic entanglement to mastering nature

The following has been brought under my attention by a book of Philipp Blom *Die Unterwerfung*. It pointed out a shift in the relation to the world whereby the attitude of the human underwent a dramatic change. In broad strokes the hunter-gatherer found himself amidst nature, a stance of dynamic intertwinement looking out actively for a prey at the same time being on guard for predators. The horizon in time was rather short from one hunt to another, from one shelter to another. Recall what has been explained above about other cultures being immersed in nature as a whole. With the introduction of agriculture and the domestication of animals, the horizon of time enlarged considerably – from one harvest to another, from the actual cattle present to the coming into being of a new herd. The stance became one of practical planning hence control over the land and the cattle. Nature became submissive as the other pole of the dominance of the farming man. However the first signs of a change in the direction of mastering all what is in the world date from Gilgamesh, it appears anew in Genesis 1:28. As a matter of fact the story of Gilgamesh was known in Babylonia where the Jewish people stayed in captivity (Jeremiah 29:10)

Whatever the origin, the idea of stewardship over all what is in the world is one of the hallmarks of the Western culture and quite different compared to the attitude present in other cultures.

Transcending the concrete: writing, money and moral as early signs of abstract thinking

Writing

Although the first signs date from as early as the 4th millennium, the so called mythological period, i.e. preceding the 6th/5th BCE, was dominantly oral.²¹⁵

Taken to the core, writing not only registered orally what got expressed, it broke apart that type of expression into a meaning being part of the actual act of speaking and a meaning in some materialized form. Moreover the latter could be preserved and further moved in space and time. That is actually the way the function of language is understood today: a means – stress on means as different from very the action - of information prone to transference. The point to be focussed here is that

²¹⁵ This is somewhat different for contemporary illiterates. They are aware of the fact that writing is common. For them it is an unknown skill where for the people in the mythical period it was a magical act escaping all understanding leaving speech appreciated as a common act in the same way people could walk they also could speak.

apart of the very act, a new type of ethereal substance “the meaning divorced from the said act” became introduced as a complete novelty.

It might not seem like it but this is a drastic turning. What is enacted becomes congealed in a material guise which can be studied in contrast to partaking a oral demonstration, read whenever the need, stored transported, handed over to next generations. The importance of it has been explained in *Orality and Literacy* by Walter Ong.

Money

Money got introduced around 600 BCE by Alyattes of Lydia, the father of the better known Croesus, as a tactical step in warfare.²¹⁶ Until then gangs of warriors robbed the local people who after that catastrophe could no longer provide themselves let alone the wandering gangs. He started paying the soldiers with heavy currency which they could trade with the locals.²¹⁷ In so doing the latter stayed alive consequently productive and could continue providing provisions to the passing armies. But of importance for the actual discussion is that this is a novel way of appreciating the value of goods. Trade used to be based on barter. Something concrete was on offer and changed hands for something else. In that way a value had a very specific and concrete form. The coins made of precious metal had a double value. In first instance it still concerned a type of barter, for example one coin of gold for a cow. But while ten chickens had no meaning for someone not in need of chickens, a coin of gold or silver could be kept and changed for anything else needed at a later date. Value became detached from a specific and particular occasion and gained a kind of neutrality. It took in the process of exchange an intermediate position. It became a concept in its own right totally disengaged from an individual meaning. This was a new way of appreciation. The concrete has slowly to make room for the abstract as a new concept i.e. the specific value of something individual got stripped until only a neutral or rather decoupled value remained.²¹⁸

²¹⁶ On the introduction of money for example Richard Seaford (2004) published an informative volume; Davies (1994) on the other hand provided a more general approach.

²¹⁷ The value of the coin was larger than the value of the material the coin was made and was guaranteed by the monarch.

²¹⁸ Charles Freeman in *The Greek Achievement* (1999) mentions that the Egyptians could handle numbers in the sense of six cows or twelve chickens but that they did not use the numbers six or twelve in their abstract sense (as referring to an abstract quantity). “...when coins and cash economy practice facilitates the acquisition of abstract and representational arithmetic” (Saxe & Esmonde, 2004, 2005) mentioned in Boesch, C. 2007. What makes us human? *Journal of Comparative Psychology*, Vol. 121, No.3, 227-240.

The changed quality of good and evil as introduced by Zoroaster.

Money appeared around 600 BCE. But something akin to the abstraction mentioned got introduced in the period between 1400 and 1200 BCE on the border of what today is known as Iran and Afghanistan.²¹⁹

Until then evil for instance took an observable tangible form. It could be a tribe threatening the community or a neighbour stealing cattle etc.

Whatever the motives living in the background, of importance here is that Zoroaster added a new dimension. In the staging he offered there was a fierce tension in the heavens between Ahura Mazda, the wise lord and Ahriman as the incarnation of evil forces. In organizing their earthly life the mortals had to make a choice. By this the concrete form of good and evil got transcended by an intangible ideal form.^{220/221}

Both, abstraction in the appreciation of value and the introduction of instances of ideal nature, illustrate the tactile and perceivable world becoming extended by a realm of intangible aetheric nature. These are dimensions entering the experience, contributing to what in time will be conceptualised into the mental and the mind. It should be observed that the construction of the “mental” took place bottom up, different elements like the abstracted value and the ethereal moral contributed. But once the concept of the mental became accepted it acquired a status of intransitivity, an idle form waiting to become filled up further (later by instances like the inner world and the unconscious).

Techné and theoria, from practice to concept

One should be aware of a particular way of ordering things. When providing information about events contributing to the content of the mind we seem to accept an instance called mind already present which consequently has to be fleshed out. But this direction should actually be reversed. Goethe observed rightfully that “in the cases something is happening and a label seems to be absent a name will pop up in good time”.²²²

Speaking for instance did not sprout from an internal mind-like source; it was an act as natural as taking a breath. It was a dimension of being in and of doing something to the world. Auditory hallucinations were not voices in the head taken today as a

²¹⁹ There is fierce discussion on when Zoroaster actually lived. The suggestions vary from the 2nd millennium (Mary Boyce, 1982, for instance on the basis of linguistics) to the 7th century BCE (Shahbazi, 1977).

²²⁰ Not to be understood as a goal to pursue but in Plato's sense as something intangible (think of the ideal geometric forms), something aetheric transcending the material realm.

²²¹ It is not clear if there is some relation but a similar move occurred with Orphism introduced in Thrace around 6th century BCE.

²²² “Den eben wo Begriffe fehlen, da stellt ein Wort zur rechten Zeit sich ein.” Goethe, 1808. *Faust, der Tragedie erster Teil*.

symptom of a psychotic condition. They were experienced as being caused by exterior forces.²²³ Concluding, certain events must have been happening which eventually provoked the introduction of an appropriate term. The intriguing question is what exactly might have been happening?

The following suggestion is borrowed from Richard Parry (2014). It provides a hint about one factor having part in that process of becoming. It is about the shift of a tangible activity observable for the concerned into the polarization of one aspect of it which by this gains the status of a more ethereal content as such escaping direct observation. In short it is about the evolution in the understanding of *techne* and *episteme*.

Parry distinguishes three stages.

In the first there is no division (yet) between theory and practice. *Epistatai* refers to the ability to perform some action while *techne* refers to the skill of doing it. Socrates in *Economicus* uses both terms without distinction. The function – in the sense of knowing and doing how²²⁴ – seems to be of central importance. This becomes particularly clear by the fact that the dimension of knowing how not being embodied by skillful action is considered to be worthless. In Plato a difference starts to appear in some cases (not in all). *Techne* stresses the skill as in farming, riding a horse, geometry, calculating and the medical practice²²⁵. Note that the last examples refer to practices we today are inclined to see on the cognitive rather than on the technical side.

In the second phase a clear shift is taking place.

The action brought forth by a medic has two aspects of which the epistemic dimension refers to the knowledge supporting a therapeutic intervention. He knows how to approach the body in order to judge (knowing/*epistathai*) the condition of it to be healthy or diseased. He understands the goal of his action. That judgment is realized by looking. Here the term “*theoria*” becomes appropriate because it is derived from the term “*theatre*” meaning looking to what is shown. At this point a subtle shift takes place. In *Gorgias* one has to account for its intervention so judging of considerations becomes more prominent. Summarizing, the execution of a skill goes with knowledge about how to do. Both become discerned but are still intertwined.

²²³ I am not going all the way with Julian Jaynes but he offers striking illustrations of that condition in his book dating from 1976. This condition of being in the world is what Heidegger refers to as that mode of being that has been forgotten (*Seinsvergessenheit*).

²²⁴ We have to realize that today we make a clear difference between both terms. To us using these relates each automatically to a particular meaning while for the period referred to in this case they should be taken as aspects or dimensions of the same unity.

²²⁵ The meaning of empirism is also going back to the medical practice. “*Peira*” stands for trial, “*empeiros*” for skilled trying out (Cf. Bas van Fraassen, *The Empirical stance*; 2002:201)

In the Republic V, and by this we reach the third phase, episteme shifts more in the direction of the skill – still the skill (!) – of knowing reality. It is particularly of interest that for Plato reality referred to the ideal forms, not particular things in the world.

With Aristotle the distinction between *techne* and *episteme* becomes definite.

There is yet another anecdotic version on the origin of this distinction and again it is based on medical intervention. Medics apply a skill at the same time of course knowing how to execute that skill. In order to provoke and facilitate cooperation of the patient they explain what they are doing. As such their knowledge slowly becomes a corpus of explanations and procedures, something in its own right which can be discussed. Here too *theoria* with a character transcending the tangible comes in place.

This offers a striking illustration of an interaction initially taking place in the realm of the tangible over time getting divided in two parts of which one becomes from then on appreciated as “*theoria*” a more ethereal substance.

This does not only divide which was one in origin in two parts, *theoria* and *techne*, it also sets and consolidates the relation between both for a quite long time. Definitely with Plato *theoria* belongs to the realm of the ideas while the technical approach focuses on providing a solution on down to earth problems. Only quite late or conversely quite recent the marriage with the scientific method provided *techne* with a creative development of exponential magnitude.

Rounding up.

The introduction of the concept of a realm of thought created the room for the next step, the introduction of the invariable or the realm of the ontic. A most important fact as this would become the dominant paradigm characterizing Western thinking. One could even wonder, if that would not have been invented, the West would have been structuring its thinking the way it does.²²⁶ In all this Plato merely fulfils the role of the exponential spokesman expressing the very idea.²²⁷

That depiction seems to be missing in the bulk of the mainstream literature being satisfied with the statement that with the philosophers of nature, science had a beginning. Contributions like the one of Parry on the introduction of something

²²⁶ At this point comparison with thought-system in other cultures becomes relevant. Reacting on a discussion, I have written (an all too simple) introduction on this “The superiority of the Western culture questioned” (ResearchGate <https://doi.org/10.13140/RG.2.2.34781.12000>) For a general comparison between East and West, the book by Nisbett (2003) *The Geography of Thought, how Asians and Westerners Think differently*. The Free Press.

²²⁷ By this reacting on Whitehead proclaiming that history of Western philosophy is merely a footnote to Plato.

like a thought and of Geoffrey Lloyd on that of the invariable are alas needles in a haystack. "Greek Religion" by Walter Burkert can also come recommended.

The introduction of the invariable

Take a step back to the condition of the early narratives (supra). In which linguistic expression was part of the instantiation of existence. This provided the basis for further development. For a next step there are two sources or interpretations which will be introduced briefly.

(1) Morton and Harman as source

Timothy Morton in "Dark Ecology" (2016) drew inspiration to some degree from Graham Harman. The introduction of agriculture provides the core. The author considers the Western culture as the living manifestation of changes in appreciating the world, changes introduced at that time in Mesopotamia. Agriculture stood for a new way of providing food by this changing the style of life intrusively. Hunter-gatherer communities had a short term time perspective. Possessions were scarce. But agriculture did not only provide the immediate needs, it also allowed stockpiling for the future. That way a reserve of food becomes a constant presence.²²⁸ Even in times of famine it is considered as lacking - meaning something which should be there but is not (at that moment). While the previous period was characterized by fluctuating and uncertain conditions, in the perception of the farming community some quality of being constantly present got introduced. Even the awareness of the absence of it in times of crop failure made it present in the daily experience. As such something invariable, crops as the tangible stuff but most importantly the idea of something supposed to be present got introduced and became experienced as a fundamental quality.

(2) Geoffrey Lloyd (1991) offers a different explanation. The overseas trade made the Greeks quite wealthy.²²⁹ It enabled them to provide the youth with a good scholarly education, the art of debating as an important discipline. That practice implies the balancing of one argument against another; in short they got confronted with the problem of subjectivity. It brought the need for an objective benchmark as criterion to evaluate to life. Observe that – ironically - the need for what in the end would

²²⁸ However not relevant for this story, it changed profoundly the hierarchical organization. Property claims on the reserve came into effect with accumulation of property, mechanisms of distribution and with owners and guards. The introduction of agriculture may rightfully be considered the most drastic all changing revolution ever taken place. By some, Friedrich Engels for instance it is considered to be the linchpin for the transition of a matriarchal into a patriarchal society, an idea on the other hand criticized by Cynthia Eller (2001).

²²⁹ "Greeks" is shorthand here for the seafaring and trading peoples around the Aegean sea.

become called objectivity sprouts from a set of subjective opinions as breeding ground. In other words the highly valued objectivity is actually built on an instable surface of subjectivity. Cutting corners, nature seemed to offer stability or invariability.²³⁰ So the idea of nature as the whole of what is out there got provided with a new meaning, nature as the prime example of that what is stable, in short invariable. This particular meaning can be recognized in the question into the nature of a person. One wants to know the characteristics which define a person through time, these which are invariable.

There is yet another source offering a version shedding light on the transition of the so called mythological thinking into what in the end would become called the rational mode. **Frankfort** et al in a 1946 publication "The intellectual adventure of ancient man" refers to the seven sages, not priests with a specific mission but man engaged in public life moved by their own desire for an understanding of nature.²³¹ They gave attention to the problem of origin not in terms of myth but for an immanent and lasting ground of existence.²³² Anaximander describes the universe in purely secular terms, eternal and ageless. The author(s – Frankfort et al.) call this shift from myth to the ground of existence breath taking bringing man from the realm of poetic intuition to a sphere of pure intellect. Thought gained autonomy. It steers all things.²³³ It opened a continuous inquiry into the nature of reality; a progressive and cumulative increase of knowledge. The universe became intelligible because ruled by thought (!) and judgement; the same principle governing existence and knowledge. Thales speaks of water not of the water god; Anaximenes of air not of the god of storms. They ignored with boldness religious representation and they pursued consistence in the way of representation.

This is an astonishing shift in the mindset, in the perspective onto nature and world. In respect to the question what motivated the change of mindset, different factors are in play. There is in first instance a degree of dissatisfaction with the anthropomorphic suggestions which often are contradictory. The overseas trade opened contact with other representations creating doubt about the version fostered locally. There was a growing culture of debate at least in the richer part of the population.²³⁴ Technical improvements required suggestions to be stable consequently trustworthy. The different versions as version (without a technical

²³⁰ It is absolutely worth reading the original text.

²³¹ The seven sages are said to bridge the stage of myth into the era of rationality. They are Thales (Milete), Solon (Athens), Chilon (Sparta), Bias (Priene), Cleobulus (Rhodes), Pittacus (Mytilene) and Periander (Corinthe).

²³² Recall the concept of essence.

²³³ Recall *theoria* mentioned by Parry.

²³⁴ Cf Geoffrey Lloyd

need) created the desire for a stable representation.²³⁵ This need became strengthened by the skill of writing which exposed inconsistencies more readily.

All refer to a moment of introduction. For Morton that came with agriculture, for Lloyd with a threshold in the realm of the exchange of ideas, for Frankfort et al. with the seven sages as exponents of a more general change. Both refer to a kind of invariance entering common thought. But whatever the causal circumstances the introduction of the invariable as qualitative condition is of importance. The introduction of a substantive signifying a transition from an uncertain and ever dynamic context into a scene where some anchor point, something stable, something invariant is appearing; at the time a completely new idea.

This might be welcomed with surprise. Is the objectivity of the world being there as something that actually is - not a natural given then? In philosophy this position is known as naïve realism. From that point of view the world experienced is without any form of hesitation taken for granted.

But recall that generating narratives as explained is based on a skill. It is not a sudden popped ability opening a window in full transparency on what is really out there. As a narrative it is a vital interpretation, but an interpretation none the less. This changing appreciation in early Greek thinking has intrigued scholars like Nietzsche and Heidegger, but also contemporary researchers like Nisbett (2003), Cromer (1993), Parry (2014), Snell (1960), Onian (1951) and Jaynes (1976).

In short, in a dynamic fluctuating tense an instance with an invariable stable character got introduced.

Formulated differently it is an expression of "that what is" or "being that" in Greek *hoti esti*, or quite directly "existential" in contrast to "essential" a condition which will be dealt with further.²³⁶

Interestingly this novelty in appreciation provides the base for the principle of excluded middle. Something is (*hoti esti*) or is not but not some condition in between.²³⁷ It may seem trivial from an actual point of view, it however were novel positions and interpretations at the time.

There is an important observation to report. The introduction of "that what is" signifies the very first stepping stone into the particular way the world is getting

²³⁵ Think of the nature or essence of things.

²³⁶ Cf. "Aristoteles and Philoponus on light" by Jean De Groot (1991/2016) On the concept of being in Ancient Greek, Charles H. Kahn's "On the verb 'BE' in Ancient Greek" is highly recommended.

²³⁷ This refers to the period of Aristotle; recently fuzzy logic has been introduced by Lukasiewicz and Tarski in the 1920's, elaborated by Lofti Zadeh in 1965, as paraconsistent logic has been by Miro Quesada from 1976 on.

understood characterizing the Western way of thinking. The qualification *paradigm* would not be inappropriate in this case.²³⁸

The quest into the character of “that what is”

Once the concept or the understanding of something being there (*hoti esti*) installed it would be only a matter of time before the question into what the nature of “that what is” would pop up. This actually took place in the 6th and 5th century BCE.

“That what is” provoked the question “what is the nature of that what is?” Or “*hoti esti*” became followed by “*ti estin ti*”.²³⁹

The scholars introducing that question were called the philosophers of nature meaning the philosophers asking the question into the nature or the character or the essence of “that what is” considered to be there in a substantial way i.e. testifying of an existence as something standing on itself.²⁴⁰

So the in first instance exclusively dynamic has been replaced or complemented with a dimension of stability or invariance in some aspects²⁴¹ provoking the question into the nature or the character of that what is invariant.

I have referred earlier to structural aboutness i.e. a narrative cannot be else than describing some thing or event, it is always about something. That is demonstrated by the structure of a declaration.²⁴²

With the question “what is that that what is” the ordering maintains the structural aboutness mentioned but besides that a new type of aboutness appears, in this case on the level of semantics. A story is told and the focus is aimed at some element being part of that story. The story is “there is something existing in its own right” and now the question is “what is the nature of that element” hence the denomination of “**semantic aboutness**”. It could as well be said that by that question the element is becoming an issue. This is the second stepping stone in what would characterize Western thinking.

Summarizing, there in the first instance is the aboutness in technical sense which originated in the process of objectification through the act of tool-making. Now

²³⁸ Other cultures remained subordinate to some sort of revelation, extra natural and divine instances or the rules of kings considered to be of divine nature. Research when occurring was executed in function of these authorities. The “Greek” culture often also had an ethical dimension (good and virtuous life) but a glimpse of a secular characterized interest started to emerge opening the pathway to Western thinking.

²³⁹ What is . . . ?” One of Socrates’ standard questions: What is courage? What is friendship? Aristotle supposes that the answer to Thinking the question—in Greek, to *ti esti*—should be a definition of the term, and that what corresponds to that definition is the “essence.” Thus, to *ti esti* is one of the designations for what we call essence. (Preus, 2007:266)

²⁴⁰ Not to be confused with the philosophy of nature as approach introduced by Schelling in the 19th century.

²⁴¹ Clouds are moving but they have invariant characteristics making them clouds in the first place.

²⁴² Reference to the part on objectification.

implemented on top of that there is in second instance occurring in the “Greek” period the aboutness semantic in kind when the content of the narrative seems to pose the problem, the subject to become discussed. The essence or nature introduced in the storyline becomes problematic or, the question now is: what is the essence of the invariant quality raised by the story as in “What is the essence of life, or of nature (as that what is outside)?” The latter is aboutness again but as said on the level of meaning or semantics.

Intermediate comment (1)

The steps offered so far, the introduction of the realm of thought which later would become appreciated as the mental and, the introduction of the invariable of which later again the essence would become questioned sketch out the blueprint of Western thinking, the scheme which would become the fundament from which scientific thinking step by step would arise.

This being the basic level there are other circumstances building further on the interpretation of man and world. Some will be discussed below.

A preview, particularities of the West

As subjects of Western culture the particularities of Western thinking come as natural and not as culture specific. The following tries to illustrate this specificity.

Nisbett (2003) sketched out differences between Western and Eastern ways of perceiving and interpreting the world, in short different perspectives.²⁴³ According to Cromer (1993) the Western appreciation is rooted in ancient Greece.²⁴⁴

It comes down to the following opposites.

In the West the object got seen as an isolated instance with an essence (*hoti esti*) while the East focussed on events and relations. In the West the question into the nature of the object got asked while the East looked to the context in order to find determining forces. In the West objects became categorized by their properties. In the East the focus remained on the relationships. The West stimulated individual identity and autonomous initiative, in the same sense as the focus on the object in isolation. The attention was directed on the features defining the essence of the object, parallel to characteristics of initiative and creativity defining the individual. In the East the social role in relation to others was central. Self-control in function of the social network was highly appreciated.

What is the relevance of this in relation to an understanding of the mind?

²⁴³ For this subject also Sarton (1948), chapter 3.

²⁴⁴ Again, Greece here is the shorthand for states and communities around the Aegean Sea.

It is about the development of the content of that dimension of the experience which seems to escape the tangible, or at least is understood to do so.²⁴⁵ At first it was the act of articulation of existence, later the introduction of that what is followed by the question into the nature of it. It asks into the nature of that what makes out the world (as perceived). It will eventually focus on the nature of the mind itself and as already has been made clear the answer changes over time.

A word of caution is in place. Not being tangible does not exactly mean not material in absolute sense. Anaximenes of Miletus compared it to air, intangible but still some kind of stuff. Pythagoras offers an anecdotic illustration. He warns not to eat (too much) beans as it promotes flatulence and by this allowing the soul to escape the body. The idea of some kind of thin air had a long life. It got promoted around the 2nd century CE²⁴⁶ and remained to the late 1600. It was thought to reside in the ventricles of the brain, an idea fostered in the transition from the 16th to the 17th century by Francis Bacon.

A gradual introduction of mind-like characteristics

The change took place in the same period as the invariable got introduced.

Until then psyche got understood in the same way as taking a breath or the flow of blood, almost tangible. Gradually it became accompanied by new meanings.

According to Jaynes (1976) Pythagoras after his travel to Egypt in the 6th century BCE, brought the idea of a transcendent instance into Greece. There the “ba” was the depiction of the “ka” the latter referring to auditive hallucinations as in an oracle hearing voices. The “ba” often got presented with wings facilitating the suggestion that it could escape into the air, into thin air rather as that escape itself could not be observed.



²⁴⁵ The following illustration offers a taste of what is meant. Cloud-computing is commonly considered as a mysterious action somewhere hidden in thin air, escaping concrete action and location.

²⁴⁶ The idea was in origin Greek and promoted by the Stoic. It was considered to be the active generative principle organizing all from the individual to the cosmos. The human soul was seen as part of the pneuma of God.

This interpretation held by Pythagoras was according to Jaynes, flawed but it nonetheless introduced the idea of an instance transcending the tangible dimension. The introduction of psyche in that transcendent guise resulted in what could be called a semantic tension. "Soma" formerly understood as corpse now became the opposite of the psyche as transcendent medium. Soma became body tout court. The relation of dualism sneaked in and provided from then one part of an overarching framework into which further understanding got organized. The other part was the question "what is (the nature) that what is?" (ti estin ti).

With the latter question lurking in the background philosophers of nature found themselves confronted with the task of providing an answer. Overtime different versions got introduced. Some believed water was most essential, others opted for air, earth or fire. Some went so far suggesting the indefinite or apeiron as the ultimate or the smallest of particles.

Summarizing, on the question "what is the essence of that what is there as an invariable substance" the answer had to be formulated from out a dualistic determining framework.

Plato and Aristotle have to be understood as attempts in providing an answer to that question. With the dualistic²⁴⁷ pattern firmly installed, their versions are of determining significance for Western understanding of the world.²⁴⁸

Pillars of Western thinking: Plato and Aristotle

Plato lived from 427 to 347 and Aristotle from 384 to 322, an overlap of 37 year.

In formulating an answer to the question mentioned, **Plato** distinguished knowledge gained by the senses and knowledge appearing out of reminiscences generated by the soul once part of the realm of ideas. The first was only appearance hence unreliable. The second however exposed the ideal forms. Of relevance for us is the dualism of which the poles are appreciated in a very different way. On the one hand there was a sense based and thus material dimension offering no more than appearance while on the other hand reminiscence of the ultimate truth (eidos) became glorified. Dualism and glorification of the immaterial pole is the pattern which will remain present to this day.

Until the 16th century the endeavour was to know God by reading the bible. From this time on God could also be known by reading the book of nature written in the language of mathematics. In that sense practising mathematics as the manipulation

²⁴⁷ The depiction offered by Pythagoras did not install dualism as such but the suggestion he made had a dualistic positioning of parts as effect.

²⁴⁸ In so far that Whitehead observed that the whole of Western thinking is actually a footnote to Plato.

of ideal contents got glorified. And however technical knowledge gained appreciation since the 18th century onwards, the pure theoretical way of doing science still has an edge on technology.

Aristotle follows at the same time diverts from Plato. He too is taken by the same drive to provide an answer on the question into the nature of that what is. He also subscribes a type of dualism between matter and soul. But he differs in the way that or rather these souls are characterized. Not as instances which once lived in the realm of the ultimate true ideas, but as forces driving the living organism to realize potentiality. In that sense plants possess a vegetative soul in order to fulfil nutritive, growth and reproduction potentialities while animals have a sensitive soul allowing perception and locomotion. The human is equipped with a rational soul allowing reason based thought. So the human as an organism is not a case of matter plus a rational competence, it is a living entity striving to fulfil potentiality. He is fully dynamic in that respect. That is an important characteristic for our story as will be made clear later when mentioning Galileo's move. It will eventually add to the content of what will be considered mind.

Plato has been of influence on Christianity from early days on.²⁴⁹ The writings of Aristotle have been obscured for the Western culture for many ages. They got translated in Arabic by Muslim scholars such as Avicenna and Averroes and around 1200 in turn into Latin. So the ideas of Aristotle became only influent from then on.

Immortality contributes to the ethereal

In the dialogue *Eudemus*, Aristotle reflects on the Platonic soul imprisoned in the body capable of a happier life only when the body has been left behind. Aristotle agrees that the dead are more blessed than the living. Dying in that respect is to return to one's real home implying that the soul transcends the death of the body.²⁵⁰ This in line with Philon of Alexandria, a Jewish philosopher who lived from 25 BCE to 45 CE, believing that the soul returned to its prenatal situation after the body died. The Roman poet Titus Lucretius (99-55 BCE) considers the soul made out of atoms smaller in size than those of the body. The soul grows in par with the body and after death it vanishes in thin air.

Many centuries later Thomas Aquinas rejects the suggestion of Alexander of Aphrodisias that body and mind are one. For Aquinas the intellectual capacities

²⁴⁹ It would lead too far off but that type of soul got recuperated by the Christian doctrine. In that sense the 17th century depicts an evolution into a secular interpretation again (Luther and Descartes versus Hobbes for instance). Further Plato's ideas never got obscured like Aristotles'. They lived further in Christian-Neo-Platonist thinkers like Plotinus and Augustine of Hippo.

²⁵⁰ Anton-Hermann Chroust. 1966.

have no need of a body. Moreover following Averroes he defends that there is only one soul and not three as Aristotle suggested.

The reference to intellectual capacities also makes clear that the different terms soul, mind and consciousness are actually used interchangeable. It is only later that consciousness for instance acquires a particular content.

“Con-scientia” going back on “con-scire” originally meant to “knowledge we hold in common”.²⁵¹ In a later period it referred to a closed company such as a family having knowledge of some facts of which the outside world was ignorant. Later again being conscious referred to the act of an individual preferring to hold information to himself. Finally the term meant exclusively to that type of information only knowable by the person himself, no longer a matter of choice but a psychological condition²⁵².

Judaism and Christianity are mentioned indirectly as by the reference to Aquinas. Without doubt they both represent important lines of force in the development of Western culture. But for this story they only repeat what is already present: a soul, a moral guideline and immortality.

Galileo's move, a defining turn

Galileo exponent of a new zeitgeist,²⁵³ focused on practical experiments²⁵⁴ thereby noting begin, intermediate and end values. This allowed comparing different settings or the same setting under different circumstances. The importance of this cannot be valued enough.

In those days an Aristotelian atmosphere reigned in which objects were considered as emanations of potencies driven to realization. So the dominant tone was one of dynamics. The world was a tangled web of turbulences emanating signatures i.e. signs of the divine will and as such providing the perceived environment with meaning. A weight falling to the earth “wanted to return to its natural place. Galileo's representation in the guise of numbers which could be compared provided a model allowing prediction of the results of organized technical operations. The world until then explained by the will of God became controllable by practical

²⁵¹ As for Hobbes in the *Leviathan* (1641) book 1, chapter 7. For a short history of the term: Humphrey, N. *A History; 1993. of the Mind*. Vinage; in particular chapter 16.

²⁵² Cf. Locke in *An Essay of Human Understanding*, book 2, chapter 1, section 19 (1689).

²⁵³ Figures like Oresme, G. Bruno, R. Bacon prepared the ground.

²⁵⁴ A degree of relativity is in order. Galileo also made use of thought experiments in some cases executed by others. The falling objects from a tower have been executed by Christian Huyghens in the Netherlands. The fall of objects in vacuum was of the experiments executed on the moon thus quite recent.

human intervention.²⁵⁵ Nature became a book written in the language of mathematics.²⁵⁶

But important in all this is that Galileo did not need the potential attributed to objects. He only made use of the dimensions of an object which could be measured. He did not even abstract the potentialities in a voluntary way; he only discarded these as obsolete for the purposes he had in mind.

His approach was successful in the perspective of manipulation of the environment. But that approach resulted in a redefinition of the object from an entity filled with tension to an inert unit characterized by measurable dimensions. It should be clear that Galileo most probably had no intention to redefine the character of the concept of an object. It followed in a natural way from the success of his approach.

And, probably superfluous to state: this is actually the way we today understand an object: an inert unit – static or mobile - mainly defined by measurement.

What is the importance of this for the concept of mind as a project in progress?

Galileo discarded all dynamic characteristics but these therefore did not vanish. It could be accepted that for instance a bloc of marble did not naturally incorporate the figure of an athlete or a Venus. But what about plants growing? The progression of growth could be measured day by day however the force-dynamic of the growing itself escaped the act of measuring. What about felt emotions or perceived qualities as in seeing colors? They remained experienced but somewhat orphaned; to which aspect of life could these be attributed? This way they tacitly became part of the realm of consciousness. It became a part of mind which only in 1866 received a proper indication “quale or qualia” by Charles Sanders Peirce and later in 1929 picked up by Clarence Lewis. It became most known by Nagel asking the question “what is it like to be a bat?”

Galileo’s move got mentioned here in relation to the appreciation of the mind.

It deserves to be stressed that apart from the introduction of the invariable or essence by the “Greeks” this “move” is the second important instance in defining the trajectory of the Western culture. While figures like Oresme and Roger Bacon prepared the ground, Galileo signified the definite onset to the successful scientific method.^{257/258}

²⁵⁵ On Galileo and his conflict with the Church see not 19.

²⁵⁶ Understanding the world came in three steps. The first was realized by deciphering the bible as the word of God, a task only within reach of the clergy. The second came down to an understanding of the will of God by deciphering the book of nature written in the language of math. Descartes provides a good example for this. And finally, at that time still to come was to understand nature in a direct way. Locke for instance left God out of the equation.

²⁵⁷ The turn from quality into quantity has been studied by Dijksterhuis: *The Mechanization of the World Picture*; 1950 Dutch, 1961 for a translation published by Oxford at the Clarendon Press.

²⁵⁸ In the First part of this book a second move got mentioned. See p. 35.

From Fremd to Selbstzwang

Galileo's move had nothing directly to do with the formation and the meaningful content of the mind. The effects of his approach had however. In the same sense there were other forces at work which would put a stamp on human behavior in general and the further conceptualization of the mind in particular. These forces were of military, urban, economic and demographic nature. This dynamic was studied by the sociologist Norbert Elias and published as "The civilizing process" in 1939/1994.

Two major lines of forces would in the end change the pattern of the personality structure.

One consisted in the organization of gangs of mercenaries often executing brute force into trained regular armies ascertaining order and keeping peace. Their interventions suppressed explosions of affect in the public arena. In order to avoid punishment by the military one could better learn to master impulses. This practice of self-control as a psychic trait became a consolidated part of the personality structure. Somewhat exaggerated it could be said that brute confrontation made room for a being well mannered.

The increase of urbanization into ever larger centers of population was the other determining force. On the one hand people had to accommodate in living close together and on the other a division of labor into specialized professions took place. This again required a considerable effort in self-restraining at the same time raising the effort to attune with the particularities of others.

As such the two forces complemented one another. There is the external pressure to behave oneself and there is the need to self-restraint in order to attune to the behaviour of others. In this Elias observes a transition from "Fremdzwang zu Selbstzwang"²⁵⁹. Courtly rules – rules esteemed proper for a court, become the stepping stone into what would become common politeness. Direct action expressing personal interest is gradually replaced by behaviour aimed not to disturb the feelings of the other.²⁶⁰

The importance of this is the shift from an interpersonal tension in the public arena to an interiorized but controlled tension within the individual; in short there is a process of the so called by all too suggestive "interiorization" becoming consolidated into a permanent psychic condition. The world experienced shifts in part from outside to inside. Psychic turbulences become private and hidden (inside). It is precisely that same inside which will provide the proper nesting for the mind.

²⁵⁹ From outer to self control.

²⁶⁰ This is very sketchy. There are publications in abundance discussing these subjects in detail.

Population year:	800	1300	1600	1750
London	11.000	90.000	80.000	1.335.000
Paris	30.000	270.000	130.000	855.000

From social interconnectedness to individual integrity

There is yet another transition in accordance with what has been mentioned. Middle Age society is characterized by a public oriented social control. People lived in large family-groups governed by interconnectedness and interdependency. This type of structure shifted overtime in the direction of an increasing urbanization as mentioned before and the upcoming of the citizen. The French Revolution as the culmination of that change broke down the old structures and promoted the individual in a new guise consisting of a unquestionable integrity, property and private life. It is obvious that this supports and strengthens the idea of an inner private life.²⁶¹

From *res communes* to private property

Before agriculture, the idea of private owned land was even not thought of. This changed with the labor invested in cultivating the land. It raised quite evidently a feeling of ownership. In the Roman period lakes, ponds, the shores of it, most of the woods and wildlife were considered to be common (*res communes*). This got even in part confirmed by the Magna Carta in the 13th century. In the 17th century Locke considered a balance between the commons and private property. His concern got inspired by a tendency which began in the 15th century to privatize and thus to enclose as private what once could be used freely by the community. The importance lies not only in the fact that it happened but that it was part of, at least developed in parallel with the transition observed by Elias.

Labour becoming a commodity

Another shift has no direct relation to the assumed existence of a mind like instance; however as with the shift from “Fremd zu Selbstzwang” it reinforces the scheme of multi dimensionality facilitating the idea of a mind as an intransitive isolated instance. It is a change contributing to the experience of duality with a radical distinction between the material tangible body and the immaterial ethereal character of the mind.

²⁶¹ Again, these are sketches of large scale movements.

Whatever the deplorable condition the serf in the Middle Ages found himself in, in a way he was one with his life world. Belonging to the estate of the lord and whatever the poor conditions of existence, he was taken care of. That was also considered as a divine punishment or a path leading to virtue. In short it was tied to one's fixed place in the divinely ordained social hierarchy. Being embedded and one with the context bared was a matter of fate.²⁶²

With the introduction of the industrial revolution two related changes took place.

In first instance labour changed from an aspect of fate into a tradable, moreover a marketable commodity. This was self evidently accompanied by the loss of being taken care of, the second change. The labourer got alienated from his labour which became a product and his condition of existence became isolated from the nest feeling.

Labour once a dimension of the integrity of the human being became an isolated instance in its own right moreover becoming an object of trade. Recalling the notes on Galileo's move, in the similar sense a transition took place from the Aristotelian potential being an inseparable dimension of the existence of an organism into an ethereal instance bound to the body at the same time sharply distinguished from it.

It could be said that the former transition in the realm of labour introduced a readiness in the mentality introducing a sphere in which the mind in a very similar way transcended the body.

This is not an unfamiliar state of affairs. Since the computer with its character of information processing made its introduction, a lot of daily life is getting understood by that metaphor – the brain as information processing unit or production processes described in terms of flows of information.

This transition might have been a facilitating factor in the understanding of the mind as a free floating instance.

Conscience & from transitive to intransitive

It is no coincidence that in the same period the term "consciousness" acquires a new meaning with its own proper name "conscience" (17th century CE). It refers to the faculty of enforcing the moral law by an awareness of what is right or wrong. This requires contemplation on the inner life in contrast to a previous consideration about events and doings in the public arena. Casuistic moral sanctioning behaviour in public i.e. being mocked in the market square even being chained in the stocks, gradually slipped into an internal regulation according to principles the concerned had to know by heart.

²⁶² An all too naive depiction only serving to focus on a shift from belonging to a context into the direction of alienation from it.

It goes with a transition of a transitive condition to an intransitive instance or being conscious/conscience as an act to consciousness and conscience as the product of an instance. In that sense, consciousness and conscience as guises of the mind like instance are from 18th century on becoming installed in the person.²⁶³ In the previous paragraph feelings getting hidden and thus private were mentioned. Here too a shift took place. At first they were kept hidden for the public on a voluntary basis. If wanted the subject was able to expose these anyway but it was his deliberate choice balanced against a probable sanction. Later in history however, feelings of that kind became considered private in an absolute way. The subject could still report the condition of anger or sadness but he was the only and privileged party who could experience what they really were like. Feelings and thoughts acquired the status of being private of nature.

Being able to, changed into an inability.

Soul, consciousness and ratio

Under 'Immortality contributes to the ethereal' got mentioned that soul, mind and consciousness to some degree could be used as synonyms. It is now the moment to specify. Irrespective the historic moment the soul remained considered to be attributed to man by God. On the other hand consciousness in the new meaning of an intransitive instance enabling contemplation of one-self was a feature inherent to man.

Already in Plato the rational capacity aimed at gaining a glimpse of the realm of ideas transcended down to earth practices. For Luther God provided all man with a divine spark allowing reading and understanding his word. Descartes takes a step further by situating the rational capacity in consciousness. As such soul and ratio gradually shift from a divine provenance into a more secular condition. This also is a development embedded in the changes depicted in other paragraphs.²⁶⁴

Reading, the madness of Ambrose, an illustration of weirdness

Apart of taking cognizance of laws, contracts and bookkeeping registers reading in the Middle-Ages was foremost trying to decipher God's will by consultation of the scripture. It was a particular task reserved for the clergy. The illiterate acquired knowledge of the word of god by the scenes on frescos and paintings on the walls of the church on the one hand, by listening to the clergy reading out loud. This should not be taken merely as an act of sharing information. It was accompanied by a vivid recitation with mimic, strong intonation and gestures, in a sense a kind of a one man

²⁶³ Called introspection it even became part of a systematic method of self scrutiny (Wundt, end of the 19th century).

²⁶⁴ For an elaboration on this move, Makari "The invention of the Soul"

show. But it was more than that; it rather was a reenactment. That was what normally got understood by reading. With this as background it becomes understandable that in the 4th century CE passersby in Milan observing the monk Ambrose reading without the movement of the lips was an act of not to grasp insanity.

Illustration: the introduction of the mind as a thing in its own right

The Dutch historian and psychologist Marius Engelbrecht studied the history of the image of man within the framework of what in time would become psychology.²⁶⁵ In the introduction he observes a transition summarized in the following paragraph. In the first part of the 17th century different types of delusions became recognized. There were holy delusions experienced by devout believers. Demonic delusions followed from bedevilment by evil spirits and medic delusions became attributed to organic malfunctions. The content of the delusion was experienced as being real. A so called possession by the devil was not a metaphor but literally being possessed by the devil hence the pyre was not only meant to be a punishment but a destruction of the evil forces.²⁶⁶ This kind of interpretation gradually became replaced by the conviction that delusions originated by malfunctioning imagination. Religion, magic and developing science previously interwoven into one realm gained bit by bit a separate domain of study and practice. The author illustrates the mentioned interweaving by referring to Jacques Ferrand a physician living in the first part of the 17th century and famous for the treatment of melancholia. Amorousness so he thought could become aroused by the brain, the heart, the hypochondrias (abdomen) or the genitals. All could bring forth urges and wishes. In similar sense three types of soul got distinguished: the rational soul, the emotional and the appetitive. Moreover all body parts and functions were considered related to earth and cosmic elements such as metals and planets.

All this seemed to change in the last part of the 17th century. The anatomical point of view focussed increasingly on the bodily (material/organic) character while “psychology” focussed on the mind becoming appreciated as an active instance prone to be studied in its own right. The body became considered to be the place of residence for the mind.

This concretizes the changes mentioned in the other parts and refers clearly to an ever sharpened distinction between mind and body. Risking to exaggerate one could consider **the mind as an isolated and more or less autonomous instance**

²⁶⁵ University of Leiden and Twente; book title “De onttovering van de waanzin”, 2010. (only in Dutch)

²⁶⁶ The punishment being that once the body was destroyed by the fire, on the day of judgement soul and body could no longer become unified.

taking form or stronger: becoming invented. It emphasizes the fact that the contemporary appreciation of the mind and its faculties as a domain experienced in its own right is of very recent date. This begs the question: if we are investigating the mind – as we actually do today – what are we actually investigating, some instance really existing or a historical artefact?

Intermediate comment (2)

This is the phase in which the turn inward takes a definite form i.e. private in an absolute sense meaning completely closed for the public eye.

But beware this is not a fact but the way the human condition under the pressure of the social context is becoming interpreted. Boldly said, this is nothing but a version, a discourse allowing to understand and more importantly accept the experienced condition.

The home mirrors the new personal structure

All of these changes responsible for a reorganization of personal psychic architecture expressed in behaviour found also reflection in the organization of the house. With some exaggeration, the layout and the character were previously very different. Doors were often open with people coming in and out at will. Rooms apart of the cooking and fireplace had no exclusive and permanent function. A bed was in most cases portable and had to be built up every night sometimes isolated from the remaining of the room by the use of curtains.²⁶⁷ Most remarkable and important in this context: people slept together even with strangers (not uncommon in hostels).

Rooms were connected directly. One walked from one into the other and in order to reach a room further on one had to pass intermediate rooms. In short, the medieval and renaissance home was rather an open house with multifunctional rooms. As Arlette Farge observes in the Paris apartments of the 18th century there was hardly a separation between in and outside.²⁶⁸ With the Enlightenment and bourgeois domesticity the mentality took a gradual but in the end radical change. Doors became closed; the visitor was expected to ring or knock. He handed over his calling card and to wait in the reception room. The meeting took place in a semi public room separated from the private rooms of the house where the family resided in intimacy. Rooms opened no longer one into the other but into a corridor. If one was

²⁶⁷ The contemporary romantic looking four poster bed has a history.

²⁶⁸ Farge, A.(1968) In 'A history of private life', 5 volumes offering a rich overview of the common daily life through history.

to contact another member of the household he or she would no longer have to pass through the rooms of others. Rooms obtained a dedicated function. These changes demonstrate on the level of the infrastructure the shift from a life style in the public arena to a life privatized behind walls with special politeness rules in relation to public life. Psychic and housing architecture seem to run in parallel and testify of a profound change in public and psychic life.

Perception, from out to in to in to out

Recall that for Aristotle something existed as the junction of matter and form. In perceiving the sense organ only caught the form. So what is getting perceived is actually a part or dimension of the external world. This implies a direct correlation between experience and universe. Near the end of the Middle Ages and the beginning of the Renaissance period the practice of mathematics became ever more influential. The truth became increasingly generated by calculation rather than by perception. As Galileo observed the senses are prone to deception while reason with mathematics at its core opened the most reliable path to true knowledge.²⁶⁹ The scholastic scholar oriented the focus to the outside world presenting him what was really out there. The later scholar turned inside working on calculations in order to generate a true description of reality. So here too there is a reorientation from the outside to the inside. All these elements are but aspects of a general reorientation resulting into the installation of an inner space. It is a telling act to mention that Descartes' insight demonstrates the pinnacle of this movement.

Luther's crowbar

Let us pay attention at another remarkable fact.

In the 5th century BCE based on contact with foreign peoples (wars) new religious ideas got introduced into Greece. Worshippers expected that rituals leading to exaltation would bring them in close contact with the realm of the divine. The idea of getting closer to the heavens, the heavenly Forms in that case, influenced Plato. He however rejected the method of exaltation and opted for the path opened by reason. By this the idea of opening the ultimate truth by reason got firmly established.

Another quite different point of interest is about the bible. The book was considered a "signature", literally a direct expression of God's will. Since man demonstrated his vanity by building the tower of Babel reaching the heavens, the meaning got veiled

²⁶⁹ Recall the introduction of the idea of something invariable, a stable criterion, what we now understand as the objective. Galileo narrowed the freedom of movement further with the emphasis on math over perception.

by the divine anger. The clergy only was considered wise enough to decipher the holy texture.

Long story short, in the revolt contesting the privileged position the clergy had appropriated, Luther an Augustinian monk, claimed that God provided all man with the capacity to understand the scripture. That capacity was the spark called ratio²⁷⁰. This point of view had actually been taken by Averroes four centuries earlier but it was only with Luther's intervention that ratio acquired a prominent position.

Apart of the fact that this led to the translation of the bible, it added in an explicit way an inner capacity with, in the actual context, the stress put on "inner".

The changing appreciation of the faculty of ratio

In line with Luther's crowbar there is another shift to be brought under the attention.

Plato recognized the value of the ratio as the preferred method to activate reminiscences of ideas, the ultimate and only reality. Recall the allegory of the cave in which perception merely realized shadows. Of importance is the fact that ratio refers to a method to be executed. From that moment to Luther spans a window of time of nearly two millennia of which more than twelve hundred years under the almost exclusive dominance of the Catholic Church until Luther's intervention. The Catholic institution also recognized the faculty of ratio but instead of a method to get in touch with the realm of ideas, in this case it was exclusively meant to contemplate God, a prerogative of the clergy. It also bore more the character of something which overcame the clergyman, a condition he had to surrender to rather than a practice to perform. As mentioned in the previous paragraph Luther redefined it as a capacity in reach of all. This broke the exclusive character. The next step got taken by Descartes. Ratio remained tied to a godly provenance but no longer restricted to contemplating the divine. Matters of nature got considered by this broadening the scope. It also became more and more some activity to engage in instead of something one surrendered to. A step further again was taken by Locke who untied the capacity of God altogether.

In overview:

- Plato: getting in touch with the ultimate reality
- Catholic Church: contemplating God, necessity to read Latin (restricting factor)

²⁷⁰ Until then the term was mainly in use in the context of mathematics as the relation from one quantity to another. The spreading of the idea of a capacity called ratio should be understood in the sense of spreading memes. It was a new way of thinking which became taken seriously.

- Luther: knowing God's revelation within reach of all (translation of the bible appearing)
- Descartes: considering nature; secularisation of the practice; God present in background
- Locke: no need for God in this activity
- Shift from condition one surrendered to in the direction of an engagement into an activity

This goes with the internalisation referred to in the other scenes.

Descartes' move, dualism and the inner space of spectacle

Understanding Descartes' aspiration

No doubt Descartes' view is still influential for the actual appreciation of the concept of mind.²⁷¹ But his approach did not appear out the blue. Some background information should be welcomed.

Recall what has been said on the development in ancient Greece. Different explanations required a criterion to decide which argument was paramount. The invariable got introduced provoking in turn the question into the nature of the said instance. "That what was"- the realm of the ontic - became an issue provoking a plethora of possible answers. Long story short the world as set of all that was out there became the object or the problem to be investigated. That is the first step. Overtime natural philosophers presented different versions. Some fell back on what the senses brought forth, others stressed the importance of the rational capacity. There was also the tension with the way revelation explained the world and certainly with the way the church forced its version upon the thinking man. Taking a giant step, it all resulted in a slumbering turmoil raising questions about the quality of human produced knowledge.²⁷² This exposes a shift from the object out there as problematic given in the direction of the thinking subject himself becoming a problem. Is human knowledge reliable and what channel should be used, what procedure should be followed to bring forth certain knowledge? It is against that background that Descartes' contribution should be understood. His proposal is an – and as it turned out a most influential - answer to the problem sketched.

Also to be taken into account is that Descartes was a keen mathematician, to be situated on the line of influence onto which Oresme, R. Bacon and Galileo can be

²⁷¹ However no one publicly endorses a radical dualism anymore the concept of mind and the mental is deeply engrained in everyday language reflecting the understanding of man and world. It is somewhat like disproving alcohol at the same time consuming the stuff.

²⁷² As overall background, it was also a period of endless military conflicts contributing to a general atmosphere of uncertainty.

placed.²⁷³ Furthermore, remember the actualization of the concept of ratio. And not to discard Descartes was a devout catholic, so God remained present in the scene in contrast to Locke for instance who had no need for divine intervention.²⁷⁴ Learning about Galileo's condemnation he wrote to Mersenne that he nearly decided to burn all his papers because his own system depended strong on that of Galileo.

*The animal dimension*²⁷⁵

In the model of the human matter, famously coined as *res extensa*, was inert without powers of whatever kind. The dynamics could be imagined like the workings of a clock, one part pushing the other.²⁷⁶ Animals were considered as a kind of automaton; the workings could be explained by principles of mechanic and hydraulic.²⁷⁷ This should however not to be taken all too narrow. In line with Aristotle's view that experience were functions of the animal soul, mental powers of man in so far he functioned as an animal should also be explained mechanical. Descartes was intrigued by the mechanical animals and human figures built by artisans.²⁷⁸

Soul, mind and ratio

Concerning the soul or mind²⁷⁹ his approach is not so clear cut as often presented. Underlying his ideas a struggle raged to rescue the Christian characteristics of the soul.²⁸⁰

In his view the soul harbored the power of thought or reason (*ratio*) separating the human from animal behaviour in experience and in the faculty of language. Animals lack awareness of their own awareness. They lack reflection allowing the human to respond to novel situations contrary to the animal which only could fall back on mechanic reflexes. Remarkable is that Descartes points out that animals precisely because they lack language cannot think with linguistically formed

²⁷³ Mentioned by Leahy in Erneling, 2005:47.

²⁷⁴ Descartes maintained a relation with Marain Mersenne. The latter a priest, was concerned that the Renaissance scientific approach would explain everything without reference to supernatural powers thus jeopardising religious influence.

²⁷⁵ The two following paragraphs are inspired by Leahy's contribution in Erneling, 2005. On Descartes there is a plethora of sources. I found Leahy brief and at the same time quite clear on the subject.

²⁷⁶ Remember Galileo's mechanics in which one part pushes the other, a cause and effect relation, in contrast to Aristotle's view on inherent potency driving whatever substance to realization.

²⁷⁷ The actual understanding is often phrased in terms of information processing by computers. In Descartes' era hydraulics with pressure and flow drew the attention in a similar way.

²⁷⁸ This underpins the conviction in some circles still accepted that animals are merely more than emotionless creatures. Mega-cattle farms and slaughterhouses on industrial scale are the hardware reflecting that conviction.

²⁷⁹ May be used as synonymous to soul as the latter embodies the power to think which actually is considered a capacity of the mind.

²⁸⁰ Leahy in Erneling, 2005:45

propositions. The ability to do that is what Descartes considers to the backbone of knowledge i.e. the characterizing feature of reason. It emerged from a language of the mind – the source - situating language firmly in the mind which is of relevance for this outline.²⁸¹

To retain is that mind here equals ratio and as mentioned linguistic propositions are at the heart of it all.

As Leahy observes²⁸² his project was deeply influenced by the effort of saving his foundational philosophy from Galileo's fate. This is another way to say that Descartes bended his views in order to save the model he had in mind at the same time avoiding a conflict with the church. From this raised a depiction of the soul, the mind or the ratio completely different from the body, almost absolutely divorced from it were it not of the minuscule connection via the pineal gland.²⁸³

For our piece of the puzzle in the trajectory of the history of understanding the mind Descartes argues that he is nothing but a thinking thing or mind, a thing that doubts, understands, affirms, denies, is willing, is unwilling, and also imagines and has sensory perceptions.²⁸⁴ From all this a not-material substance seems to appear, a *res cogitans* – a thing that thinks. It is a substance without matter not occupying space and so not extended and, completely separate from the body

The following is of that importance that I choose to take over the paragraph:

“Descartes was not the first to prove his own existence from mental activity. St. Augustine had said, “If I am deceived, I exist,” and from Parmenides is known “For it is the same thing to think and to be.” What was new and of profound implications was Descartes’ radical reflexivity (Taylor, 1989), his focus on the self and **his invention of consciousness as a thing that could be considered**, in short that could be studied. Augustine had turned inward and found God. **Descartes turned inward and found only himself**”.²⁸⁵ With and through this gesture the self became an object of attention.²⁸⁶ (stress added)

This illustrates strikingly the turn of the focus in the direction of the psychological self laying the foundations of the study of the mind as part of man. However God remains undeniable present in the background, man here is understood in a secular

²⁸¹ And here of course the link to (the early) Chomsky and Fodor is apparent. Chomsky was well acquainted with the appreciation of and the method to teach language from “les petites écoles de Port Royal des Champs”.

²⁸² In Erneling, 2005:47.

²⁸³ Thomas Willis criticised the very idea because all mammals have a pinal gland too. For a critical discussion of the relation body-mind, Skirry (2006).

²⁸⁴ Doubt is more serious than it at first sight seems to be as hyperbolic doubt was the ultimate basis confirming his being. “I think therefore I am” expressed the undeniable fact of existing as a self-conscious thinking being.

²⁸⁵ Leahy in Erneling, 2005:48.

²⁸⁶ Leahy provides a clear example. Asking you to look at the green colour of a leaf in the Aristotelian approach one would indeed focus at the colour of the leaf in front of him. In Descartes’ approach one focuses on the experience of green in consciousness – paraphrasing Nagel “what is it like to experience green?” (in Erneling 2005:49).

psychological sense. Locke would go as far as discarding the need of a divine instance altogether.

This resulted into a narrative depicting two worlds, one objective mechanical world which can be known scientifically and a subjective world accessible by looking inwardly, by consciousness. Remember the movement into the direction of self controlling. Descartes' organization of the relation outer - inner fits this setting in a quite natural way. At this point appears what Dennett would coin the Cartesian theatre. The inner self looks at a screen onto which the data gathered by the sense organs are projected. From then on the naive direct contact with the outside world gradually got replaced by a state of affairs in which sensations are getting projected in the mind or the consciousness, projections which then in an act of reflection could be examined.²⁸⁷ The idea or the concept of an inner space available for inspection or rather introspection, took firmly form. It became the natural way of thinking. The experience got objectified, provided with an already existing label "consciousness" and as such acquiring the status of a genuine object of investigation.^{288/289}

With his dual model Descartes imposes a defining mark on an already ongoing change in the understanding of the mind.

That change moves from a public regulated life into the direction of a privately governed behaviour, the presence of a (Christian) soul characterized by a seemingly transcendent and aetheric character, and faith getting accompanied even threatened by an ever more becoming influential method of rational thinking.

Something particular should be noticed. Descartes focused on the pineal gland as part of the brain which brings us to another shift in the direction of the way the mind is understood today.

²⁸⁷ I could as well have said "medieval believers in observing the world around them participated in the idea of God" so externally oriented while with Descartes the focus got turned inside looking for ones personal ideas.

²⁸⁸ Remember the redefinition of the object through the approach of Galileo. It lost its Aristotelian dynamic character and became a thing prone for explicit measurement and systematic manipulation, in short a type of instrumental consideration. In a sense something similar took place here: the naive direct contact with the world got lost and replaced by a type of consideration which is characteristic for a type of science as sketched out by Galileo. Consciousness, the inner theatre and what happens in that theatre is becoming prone for instrumental consideration. Experience became depicted in an act of reflected, introspective study bringing forth an object of experimental control. Looking back on this turn neither Galileo nor Descartes were as individuals the geniuses sparking the turns of development, they rather were the exponents of a changing Zeitgeist.

²⁸⁹ At the same time, but this transcends the scope of this discussion, an impossible struggle is getting fired up. What has been reduced to an internal subjective case in the first place, should now become withdrawn from that subjectivity seeking to grant it a status of objectivity. As Leahy comments "Galileo and Descartes made it imperative to study us—to practice psychology—so that the subjective contributions to experience might be subtracted, leaving only objective truth". (in Enerling, 2005:50) Here too history repeats itself. Remind that the introduction of the invariable (*hoti esti*) was brought forth by the endeavour to escape the undecidability of different arguments put forward. For the seriously interested, Makari's "Soulmachine" (2016) is absolutely a must.

Descartes redefines the mind

The redefinition of the object by the method introduced by **Galileo** was as said not an intentional move. It followed from what he as the exponent of a *Zeitgeist* practiced. Things became however more explicit through the argumentation offered by **Descartes**. The only instance he could not doubt so he said in the *Meditations* was that he found himself in a condition of precisely *doubt*. Whatever he tried, systematic reasoning could not take him any further. By this he introduced the doubting instance as the ultimate or final point. It took the position of subject, what he coined the *res cogitans*; and all what appeared in confrontation to it as the *res extensa*. This made an alternative view on the human appear on the stage. The human in the Middle Ages took the guise of a dynamic instance by God provided with a soul. The secular instances of mind were more bodily than ethereal. Man was a social, public and dynamic entity with the stress on the character of a behaving whole. But in the proposal by Descartes the human became almost literally split; the material dimension took a confrontational position clearly distinct from the other part, the *res cogitans*. At this point the same move as with Galileo appeared however in this case not as an unintended consequence but as an intended explanation.

This is again all too brief. It only wants to draw the attention onto the shift mentioned. The Middle Age model of the human never left the scene completely but became repressed into the veils of the background. It had to make way for the new pattern in which there is a mind as core – even stronger the instantiation of the subject with all the other “stuff” becoming object. In time this view became fully incorporated into the common image of man. But it should come realized that it signified a radical turnaround still permeating contemporary forms of understanding. Of importance in the overall frame of this explanation, Descartes suggestion signified a decisive step in the acceptance of the idea of a mind as an intransitive instance. Roughly spoken, where once there was as dynamic social organism provided with a soul appeared a shift in the direction of an individual – in the end encapsulated – player consisting of a secular mind and a body however connected also to be taken clearly distinct, both dimensions obeying a different type of organisation. The oneness seemed to have gone lost.

Take a moment to realize that difference. An organism being one plus a soul embedded and intertwined with the social niche changes into an instance divided into two dimensions a knowing mind and a material extensiveness positioned in a confrontation instead of an intertwining. This is a very different vantage point.

There is one more detail not of immediate relevance which however should come mentioned. That is that all what becomes considered *res extensa* can come

described in the language of mathematics. Recall the mentioned Galileio stating that the book of nature is written in the language of mathematics. As Descartes too was an engaged mathematician this principle became adopted without hesitation.

Willis, from heart to brain

For Aristotle the heart is involved in emotion and thinking, a point of view still fostered by Henry Moore in 1652. Even today when someone is getting emotionally moved he intuitively speaks from the heart and when engaging full heartedly (sic) into some event it is also said that he is taking it to heart. Concluding when emotional turbulences are in play, even to this day the heart remains the first candidate to be mentioned. However it cannot be denied that the brain gained importance in spite of the fact that according to Aristotle it merely evacuated the heated fumes produced by the activity of the heart. On the contrary today all serious work like thinking, deciding and being conscious is attributed to the workings of the brain. For that shift Thomas Willis a medical doctor from the 17th century played a significant role. His anatomical studies of brain and nerves got published as “Cerebri anatome” in 1664. This reference here being short, the effect of Willis’ work cannot be valued enough. He provided the fertile soil onto which the whole movement resulting in the actual glorification of the workings of the brain commonly coined brain centrism, could take place. This however does not mean that the understanding completely changed.

In 1704, Jonathan Swift in the *Mechanical Operations of the Spirit* noted “it is the Opinion of Choice Virtuosi, that the Brain is only a Crowd of little Animals, but with Teeth and Claws extremely sharp, and therefore, cling together in the Contexture we behold, like the Picture of Hobbes’s Leviathan, or like Bees in perpendicular swarm upon a Tree, or like a Carrion corrupted into Vermin, still preserving the Shape and Figure of the Mother Animal while in as late as in 1760 Tristram Shandy mentioned “You have all heard I dare say of the animal spirit”. The latter had to be understood as a kind wind moving through pipe like hollow nerves. The basic pattern in which the centre got relocated changed but it took a long time before all prejudices from the past were gone.

As a note in the margin and taking a leap in time, the study of a particular case of brain injury resulting in the loss of regions deemed essential for self-awareness demonstrated that it surprisingly could be realized without a contribution of that organ.²⁹⁰

²⁹⁰ Philippi et al. (2012)

All this has evidently nothing to do with the redirection from out to inwards, but it would in the end provide the home for the inside assumed thinking mind.

The unobservable particles inside

There is yet another symptom for the turn of the focus inwardly. Galileo provides a clue in “Il saggiatore” or “The Assayer” written in 1623. In that publication he proposes that what can be perceived by the unaided eye is caused by the workings of particles so small they escape observation.²⁹¹ Galileo is also the man using lenses to bring forth a spyglass allowing stakeholders to perceive the arrival of ships at the horizon as early as possible. But the view of a ship is no revelation; everyone knew what a ship looked like. The shocking discovery took place with man like Anthony van Leeuwenhoek en Robert Hooke who turned the contraption upside down and observed life on the scale of the very small never seen before. This is again a turn diverting the attention from the public arena in the direction of the so far hidden world of the smallest of things having affinity with the inner dimension of man also harboring hidden workings. Remember the mentioned Assayer.

Galileo is generally remembered for experiments, the use of lenses and his position in relation to heliocentrism the latter challenged fiercely by the Roman Catholic Church. It deserves to be stressed that his influence reached further, deeply influencing still actual concepts. The understanding of an object as an inert mass prone to be handled (and measured), the suggestion of the workings of the smallest particles contributing to the installation of an inner realm are beyond doubt boundless important.

A brain based mind enters the scene

The following is an excerpt borrowed from “The Soul Machine” by George Makari. I discovered this work only lately and the following page is strikingly relevant in the actual context.²⁹²

Locke created a new anatomy of inner life, relying heavily on neologisms like “self,” a word he concocted, and others with long histories like “idea,” “person,” and most critically, “mind.” In Old English, *gemynd* and *mynde* first referred to memory alone. During the Elizabethan period, the words were widely employed to denote inner experience. Poets and writers had many a notion in mynd and were of a mynd to act on them. A smattering of phrases employed this meaning

²⁹¹ Cf. Agazzi & Pauri, 2000:7. This was not a unique observation. It is also present in the work of Beekman, Gassendi, Newton, Boyle, Mersenne, Hobbes.

²⁹² As a matter of fact, the whole of the book is and is as such highly recommendable.

—to remind, keep in mind, bear or have in mind, or come to mind. Another connotation also existed. From the earliest days of Chaucer, Englishmen could have another in mind, speak their mind, or set their mind on a task. Thus, personhood might be abstractly associated with this word. William Shakespeare, in one of his famous sonnets, referred to “the marriage of true minds.” A century before Locke, the meanings of this word began to migrate. Having in mind, having to mind, and needing to remind grew to imply the concept of an inner possession, first synonymous with the soul, but gradually different. The Bard anticipated this usage when he referred to the mind as an inner organ: love saw not through the senses, but through the mind’s eye. The alchemist and diplomat Sir Edward Dyer composed his poem on the mind as his personal kingdom, man’s greatest treasure. And if the mind was a possession, it was something that could also be lost. From at least the 14th century forward, men were said to lose their minds, go out of their minds, or not be in their right minds. Shakespeare wrote of a “mind troubled by deep melancholy” and of futile attempts to “minister to a mind diseased.”

However in these cases, the mind was still a working synonym for the rational soul. There was no hint of trespassing on holy ground, no apparent contradiction yet between that mind and the soul. However, along with Thomas Hobbes, Thomas Willis, and Gassendi’s expositor Walter Charleton, a few intrepid English thinkers had begun to develop concepts and theories of the mind that tilted away from Platonic and Cartesian souls, and headed toward the dangerous belief in the mind as an object of Nature, a thinking *thing*. In 1645, the Catholic Kenelm Digby, from his exile in Paris, alongside Mersenne and Hobbes, published his *Two Treatises*. Sensation, memory, and imagination were material, the result of matter in motion. Lower forms of reason were also bodily, such as the fox’s behavior as it stalked a hen. Digby still considered higher forms of thinking to be in the domain of the immaterial, but anyone who considered his example closely would need to wonder.

Another early expositor who moved toward a natural mind was the English doctor trained in Leiden, Richard Burthogge. He shared many of Locke’s political concerns and wrote his 1674 *Organum vetus et novum, or a Discourse of Reason and Truth*, to forward the belief that the mind clothed its sensations with subjective “notions.” Anticipating Immanuel Kant, Burthogge concluded that reality itself was not knowable, and claims of absolute knowledge simply demonstrated a diseased mind, one filled with prejudice. Sanity consisted of a freedom from the delusions manifested by philosophical enthusiasts like Paracelsus or theological ones like some Dissenters. Later, Burthogge would propose the Platonic idea

that pure mind was God, but the doctor would also argue that in humans the mind was a thing impure, one merged with matter. These were some of the gestures taken toward the notion of a brain based mind, one that obeyed the laws of matter and somehow also had active powers to think and will.
(Makari, G. 2016. *The Soul Machine*; p.106/7)

The shift in the appreciation of art

Until the 18th/19th century the goal of a painting was to depict what was seen. The painting of a mountain or of a family was meant to appreciate what was really present in the world. This agrees with the older earlier mentioned appreciation of perception, what was seen was what was there.

The more recent form of art does not attach much – if any – importance on what is actually perceived as being out there. It stresses the subjective impression of the artist or as in conceptual art, seeks to provoke a subjective impression in the observer.²⁹³ The outside world as reality got replaced by the world as subjective appearance; the inner turbulence fired up by it becoming the object of attention, if not investigation.²⁹⁴

Again the turn inwards is a broad almost all encompassing move.

The mind getting sick & on the unconscious

Turning the gaze inside drew the attention to conditions and processes which always had been there such as drives, emotions and an endless flow of inner speech. And, focusing on the inside workings reinforced the attention as in for the first time noticing a small wart, the greater the attention the larger it seems to become. The increase in attention for consciousness clearly appears in the first part of the 19th century – that late indeed. Recall what has been said about the cultivation of self control and the reorganization of the house expressing a tendency of privatization. Johan F. Herbart, psychologist and pedagogue mentions inhibited ideas reaching consciousness only with adequate strength. Fechner another psychologist repeats this idea by indicating a threshold of awareness in relation to the intensity of the sensation.²⁹⁵ There seemed to be a need coming up to refer to mental states exceeding introspective consciousness.²⁹⁶ Unconscious as a condition, stronger still

²⁹³ Romanticism and expressionism are other strands stressing and appealing on the inner emotional turbulences of artist and admirer.

²⁹⁴ The goal set is to point out a broad line of development. It is of course a crude simplification.

²⁹⁵ There exist other meanings in which “unconscious” as label is used. Piaget for instance thinks of processes not yet (fully) in control by the up growing child and in general people are not conscious of the workings of the digestive system or of blood pressure.

²⁹⁶ For an in depth discussion: Makari, G. 2008. *Revolution in Mind: The Creation of Psychoanalyses*. Harper Collins.

even in the guise of an intransitive instance became an issue, an object requiring scientific attention. This rather psychological interest was accompanied by an increase in the interest even engagement in a rather pessimist romanticism à la Schopenhauer or think of “Die Leiden des jungen Werthers” by Goethe. Schopenhauer is interesting as some of his ideas return in Freud such as the limited scope of consciousness, the importance of the will and of sexuality.²⁹⁷ So far for an all too brief note on the characteristics of the unconscious taking the foreground. But there is more.

In a public oriented community the affects are getting exposed and realized in a public event. With the pressure in the direction of self control the tension between the attitude of politeness demonstrated in front of others and the character of emotions experienced as something happening seemingly internally can take unbearable proportions. That is the point at which what from a psychodynamic perspective would be called repression, came into effect. It opened the gateway into a cultural determined type of psychic contortion.²⁹⁸ Approached from a medical framework it will be considered psychic illness.

This turn creates a rather particular perspective and opens a realm absent in earlier times.²⁹⁹ By way of analogy, in the Middle Ages something like a television set was impossible to be thought of. In the same sense the type of the so called psychic illness could not be thought of neither.³⁰⁰ It got installed in a particular socio-cultural setting. This bears implications for the applicability of the so called psycho dynamic approaches when projected as an explanatory framework onto subjects having lived further back in time (psychohistory).

A culture of culpability

Already with the work of Norbert Elias the shift from external to internal – self – control has been mentioned. This goes with the previous passage on the inner unconscious workings. But still another mindset is playing an important role. Christianity is characterized by atmosphere of guilt and humbleness. In medieval times this got exposed by publicly doing penance, even chastise. With the mentioned shift it gets more and more a case of inner feelings, an intrusive condition of remorse. This is not the place to go deeper into this important subject but it cannot be left out altogether

²⁹⁷ For an elaborate presentation: Gardner, S. 2008.

²⁹⁸ To be distinguished by abnormal – out of the normal – behaviour caused by anatomical defects.

²⁹⁹ Foucault, M. 1965. (Original in French: 1961. *Histoire de la folie à l'âge classique – Folie et déraison*. Paris: Plon). Also *History of Madness*. 2006. Unabridged, Khalfa.

³⁰⁰ That type of disturbing behaviour was considered to be a sign of being possessed by an evil spirit. That condition actually was proof that the soul existed – it could become possessed.

Moral from objective given to subjectively rendered

Here too no more than a annotation. Before the 17th century moral was something given and imposed on the individual, rules he had to obey. This changed with Adam Smith for instance by introducing the impartial spectator. It was an internal instance with whom the individual seemed to be able to converse, to discuss how to do the right thing in which sympathy, taken in the sense of empathy would play the role of yardstick.

Notes on the installation of an inner (Toulmin) theater (Dennett)

Toulmin (1979) draws attention to a remarkable difference.

"...scientifically minded writers of the seventeenth and the early eighteenth centuries have *introduced* into our ideas a quite special kind of clarity. Their vision of mental life as if carried on in a totally enclosed movie theatre located somewhere in the depths of the human brain..."³⁰¹ The idea so he explains is based on the confusion of inwardness and interiority. Cutting corners, we know that the gastric system for instance is situated inside the volume contained by the skin. But there is also another understanding of "inside". Toulmin refers to Newton writing "Is it not the Sensory into which the images are carried through the nerves that there they may be perceived..."³⁰² Our minds are imprisoned from birth in the depths of our brains, Toulmin concludes. Our mind goes on in the interior framed in an actual version: the immaterial mind is in some way brought forth by an internal computer and this depiction does not help at all to eliminate this misconception.

There is a radical difference between putting the finger on an internal location as in the case of the stomach and ascribing workings and effects to the inside.

Criticizing the Cartesian and for that matter also the Lockean Theatre Dennett is absolutely clear.³⁰³ It is a logical construction. I would like to add: it is a metaphor, nothing but a metaphor.³⁰⁴ There is no such thing as an inner space in which images can be seen. It is no more than a colorful way of expression as in the sentence "a camel is the ship of the desert". A camel is not a ship neither is the desert the ocean. In case of the mind, this is an illustration of a fallacy of misplaced concreteness. As J. Mill strikingly observed some experience has a name so something substantial of

³⁰¹ Stressed "introduction" – it has been introduced (!) and, observe the period mentioned by the author, 17th – 18th century.

³⁰² The quote has been shortened for brevity. Further Newton here respects the Aristotelian depiction in which the ventricles in the brain are the locations where imaginative, cogitative etc. are located. In that sense the sensory image finds an identifiable location.

³⁰³ On Locke, Leahey:2004. On Dennett, 1992.

³⁰⁴ Cf. Leary, 1990.

that kind has to exist. Let's be serious, where is that secret space that not can be found?

Introspection in developmental psychological perspective

Piaget argues the attention of the child for an inward life – the so called act of introspection – develops only during the school years. This is linked to the transition of primitive wordless perception to the perception of objects guided by words, in which the object perceived receives an extra dimension of meaning. In tandem with that what the child experiences wordless in the cultural context he shares with his educators, that experience is getting enrobed in words, it becomes named in an explicit way and by this gaining saliency.

It might not be overlooked that developmental psychology draws from two contexts. In broad perspective it describes developments any child goes through irrespective the historical time slice. On the other hand it also specifies particular historical twists and turns. The children Piaget studied were all embedded in the 20th century. The social and cultural conditions of the Middle Ages were completely different. In that sense what is discussed here is embedded in a discourse in which an inner directed gaze is already culturally installed.

This short note on the development of introspection is added in order to draw the attention that this is a process of culture imposed development different from a seed developing naturally into a flower. If the pressure mentioned is absent, then that particular turn will not take place while the seed once planted will grow without hesitation.

Inner speech

In line with the previous note about the focus on the inner life as an acquired attitude, inner speech or the never ending chattering “in the head”, might count as prototypical example of an inner life.

As Ryle in line with Vygotsky observes “The trick of talking to oneself in silence is acquired neither quickly nor without effort; and *it is a necessary condition of our acquiring it that we should have previously learned to talk intelligently aloud and have heard and understood other people doing so.* Keeping our thoughts to ourselves is a sophisticated accomplishment. It was not until the Middle Ages that people learned to read without speaking aloud. Similarly a boy has to learn to read aloud before he learns to read under his breath, and to prattle aloud before he prattles to himself.” (Ryle, G. 1949/1990:28; italic added)

In summary

1. First the skill of producing speech in relation to another person (the level of explicit instruction in learning to drive a car)
2. After a lot of practice the so called internalization takes place (the skill of driving becomes automated i.e. processed by the cerebellum)

But in the latter case does it become mysterious taking the guise of an inner voice manifesting itself out of thin air? Of course not, it is an in principle public observable act that has escaped consciousness. That is not mysterious, that is plain and simple what the process of automatisisation implies.

Pinker and Jackendoff report an interesting observation "...the inner speech of deaf signers consists of signs rather than sounds" (2005:225). By this they confirm that the initial outer mode determines the forthcoming "inner" mode. Somewhat further on the same page they conclude "But given that inner speech depends on having outer speech (...) we are inclined to think that if anything is a by-product here, it is inner speech."

In spite of Ryle's view on this subject, inner speech was at the time of writing "The concept of mind" 1949 that is, still a kind of a mysterious occurrence as its manifestation could not be observed. This has changed. Sokolov succeeded in measuring variation in tension in the buccal area in the case of public speaking, whispering, inner speech and mental calculations (1972:161). Endophasy needs no longer to be considered an ethereal phenomenon appearing from thin air, but a form of action in principle open for public observation all be it with specialized equipment.

An intriguing but to be honest a rhetoric consideration might be about animals having no language, at least no language of the type the human possesses, do they experience something which might be comparable to a stream of inner speech? Do they have something like an inner experienced life? Moreover do wild children never learned to talk testify of having an inner life?

Rounding Up: Narratives as Technical Constructs

While much more could be elaborated, the preceding exposition provides a striking and sufficient illustration of the core argument. References to seminal works have been provided throughout for the more inquisitive reader. At this juncture, it is essential to recapitulate the most important milestones of the analysis.

First, however, a fundamental reminder is crucial: a narrative—the interpretive framework that renders experience coherent—is itself the product of a technical intervention. It arises from the capacity for agentive displacement and the

manipulation of second-order stimuli. One could say that narrative, as a cultural product, floats upon this technical, cognitive skill.

Consequently, when we refer to "the mind" or "the inner world," we are not pointing to pre-existing, intransitive metaphysical entities. We are pointing to a particular kind of storyline, a staging of experience that makes certain phenomena understandable and acceptable. It is akin to pointing to the newspaper as a material and social institution, not to the seemingly self-evident "news" it contains. With this clarification in place, our genealogical question sharpens: What were (and remain) the specific historical circumstances that gave rise to this particular kind of staging and self-understanding? In short: a narrative is a technically realized construct, the specific content of which is animated under the pressure of contingent historical forces.

It is of the utmost importance to make this technical grounding explicit, as there is a pervasive tendency toward a tacit naïve realism that looks only at the compelling surface of the storyline, mistaking the constructed simulation for the underlying reality.

With this foundational observation firmly established—and given that the previous analysis has traversed numerous evolutionary and cognitive "stagings"—it will be useful to conclude with a simplified schematic overview. This overview will distil the architecture of the argument, tracing the pathway from shared animal condition to the specific cultural narratives that now demand our critical examination.

A schematized overview

The starting point was that the human as a species amongst species shares with at least the non-human animals most akin a basic set of characteristics.

Common with the species most akin
- primary motivation
- relation regulative tension
- embodiment
- holism
- relevance
-...

From this point on a technical phase begins with some observations inferred from the typical stone tools:

the technical phase

Step 1 – objectification
manipulable – template
distance
consideration
= aboutness

With this as necessary steppingstone allowing

Step 2 self initiated displacement in the experience
provoked by the manipulation of
implements functioning as stimuli of
2nd order

the building blocks allowing
narration

Step 1 and 2 providing the technical engine bringing forth

a semantic content or storyline
the interpretation providing narrative
determined by historic
circumstances
differing from culture to culture

the technical phase

Floating on top of the above:

the semantic layer

changes in the interpretations of world and nature

The technical dimension points out the fact that narratives are brought into being by the manipulation of stimuli of second order. The content of the story is the inseparable flipside. That is a universal characteristic precisely making from the technical skilled hominin a human.

mythopoeic thinking
universal basis
- heteronomous
- holism
- animism
- relational
-...

Non human animals are subject of forces allowing to consider their behaviour heteronomously determined. For the line which eventually would lead to become human the ability to bring forth narratives marks the fundamental difference. But in this case too the content of the storyline also refers to external causes (gods, animated instances etc.). While the difference is that the human produces narratives, the similarity is that the content of these also demonstrates heteronomy. Having thoughts' was in the mythopoeic phase also attributed to external instances.

The following schematizes seven important threads. There are more but these represent core moments in the contemporary Western way of thinking, of interpreting the world.

First

hunter – gatherers
migration
event time (ripening fruit, presence of game...)
Immediate return
the condition of the moment (season,
migration of animals...)
holism
shaman
...

agriculture
residential
cyclic time (sowing, harvesting)
deferred return
long(er) time planning
Improvement of the plot
domestic distinct from wild
realisation of surplus
origin of priests responsible for safe keeping
and redistribution of surplus
...

Second

from engaged to
taking the stance of
stewart

Third

money > abstract nature of
values
preliminar to ethereal realm
(the mental...)

techne $\neq$ theoria
intro of realm of
thought

ethereal $\neq$ matter
dualism

Fourth

need of criterion
intro of the invariable

The quest into the nature of that
what is invariable (the ontic)
the Western paradigm

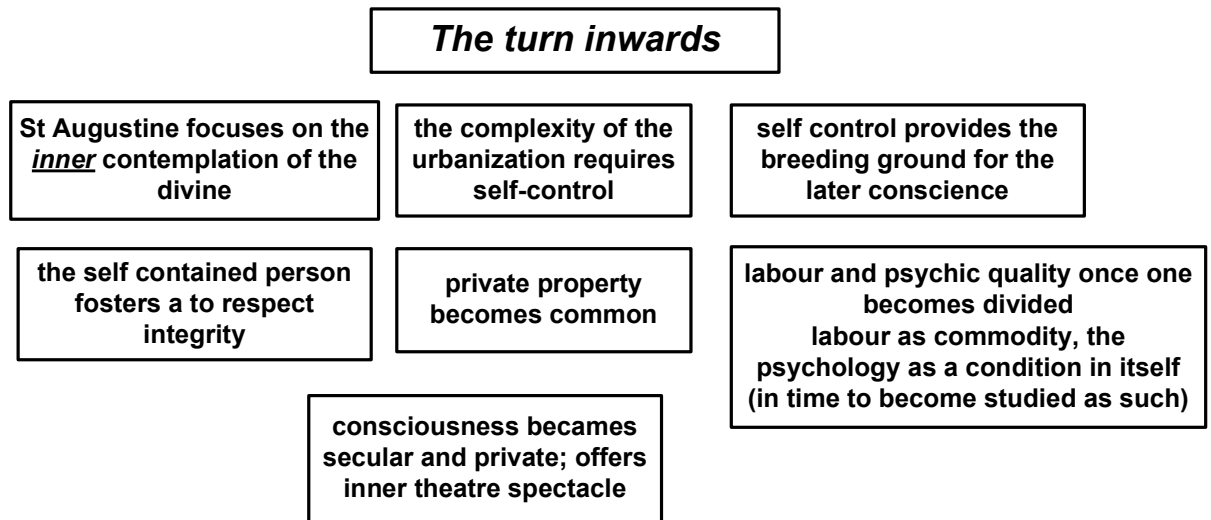
Fifth

for Plato truth existed in the realm of the ideal

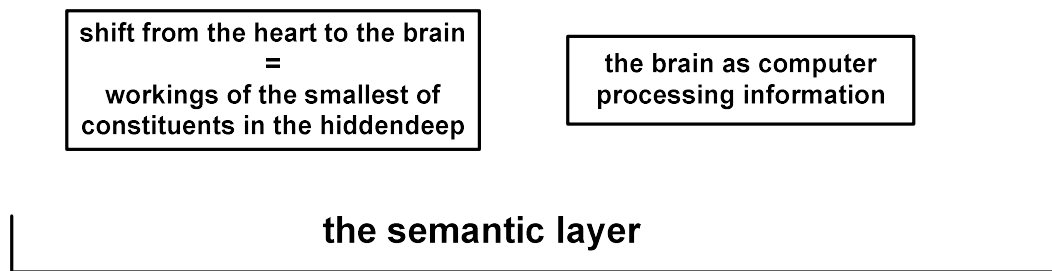
this could also be reached by the human
making use of the right method
(rational thinking)

the ambition to unveil truth

Sixth



Seventh



The Western Paradigm: From Philosophy of Nature to Science

While multiple threads have been discussed, the configuration termed the Western Paradigm is of cardinal importance. It determines a specific, instrumental relation to the world and underpins mainstream Western thought in a dominant, yet often invisible, way—its assumptions are so deeply ingrained they are taken as the natural stance. Although we have so far referred to it as a paradigm, it more precisely marks the genesis of the philosophy of nature, which in time would become modern science. To my analysis, it represents *the* decisive turning point that inaugurated a particular, enduring mode of understanding nature.

This historical specificity raises two interrelated questions: Is philosophy (and by extension, the philosophy of nature and science) an exclusively Western phenomenon? And why did this development not occur in the Far East—a puzzle known as the Needham Problem.

Philosophy as a Western affair

The assertion that philosophy is a uniquely Western project finds support across a diverse range of thinkers.

- Martin Heidegger provided perhaps the most direct testimony. In his lectures on Heraclitus, he states: "There is no philosophy other than Occidental philosophy. 'Philosophy,' in its essence, is so primordially Occidental that it bears the ground of the history of the Occident".³⁰⁵ It is said that he later changed his view but on closer inspection that seems not really been the case. In "Unterweg zu Sprache", he refers to a conversation with the Japanese professor Tezuka stating that his own path of thinking is no longer "philosophy" because it is precisely an attempt to overcome the metaphysical tradition. I (Heidegger) have left behind the earlier standpoint of Being and Time, not in order to exchange it for another, but because even that standpoint remains merely in the presentation of a fundamental question of metaphysics... The path of my thinking in the meantime has led from metaphysics to its essential origin." This expresses that he was no longer doing philosophy in the strict Occidental sense i.e. dictated or organized by the paradigm of looking for the essence in the invariable – what I coined the technological step. Inspired by the Far

³⁰⁵ Originally part of courses given in 1943/1944; published as *Heraklit* in 1979.

Eastern way of thinking he now looked for a synthesis overcoming the Western pattern. That agrees with the step I have taken lately by questioning - taking a step back - the status of the narrative... any narrative for that matter. That does not absolve me at all from being narrative, but this step forces upon me the insight on the relativity of whatever narrative (in contrast to take it in a naive realist way – the world is as I see/describe it). It is by this move that during a recent trip the difference in narratives between Java and Bali showed itself so clearly to me.

Unlike Heidegger I would however not try to overcome the determination of the Greek-Western paradigm as it has been enormously successful in the skill of negotiating the Umwelt. And in the case I would opt to take distance from the said paradigm, I would not look for a synthesis between West and East as Heidegger did but prefer to direct my thinking, or rather being in the direction of the older pre-rational thinking, the mythopoeic thinking (Frankfort), the mode prior to the 6th/5th century BCE.

- G.W.F. Hegel was equally convinced, arguing in his Lectures on the Philosophy of History that true philosophy begins with the Greeks, marked by the emergence of the concept and a self-conscious perspective capable of reflecting on both the external world and itself.

- Pierre Hadot, the historian of ancient philosophy, reinforces this view by treating philosophy not as a timeless set of doctrines but as a historically situated spiritual exercise with a specific, Western provenance.

- From anthropology, Ernest Gellner contrasted the “enchanted,” tradition-bound thought of the East with the West's drive toward an objective, disenchanted conception of truth.

- Comparative philosophers like Roger Ames argue that foundational Western concepts such as “truth,” “being,” and “free will” are either radically different or absent in classical Chinese thought, which is structured instead by role ethics, relational networks, and aesthetic harmony rather than a search for ontological essence.

This consensus aligns with my own conclusion after prolonged study: the specific orientation and practice called philosophy—as a systematic inquiry into the *essence of what is*—emerged in the Far East primarily through engagement with and reinterpretation of Western thinkers, often through a Kantian or post-Kantian lens.

Scholars like Chakravarti Ram-Prasad point to a fundamental incommensurability in comparing these worldviews, an idea resonating with a Wittgensteinian understanding of distinct cultural “language-games.” Richard Rorty states the case

most radically: philosophy simply is the tradition running from Plato to Nietzsche—a lineage that is, by definition, Western.

A Concluding Clarification

As I have argued elsewhere, I do not define philosophy merely as the "love of wisdom" (philo-sophia). I understand it as the urge to gauge and unveil the essence of "that which is"—where it must be noted that the very formulation "that which is" (to on) is itself a foundational introduction of Ancient Greek thought. This ontological quest, with its attendant assumptions about a stable reality to be disclosed, is the hallmark of the Western paradigm whose historical and cognitive conditions we now seek to trace.

Why not in the East... the Needham problem

Joseph Needham's seminal question in *Science and Civilization in China* (1956)—why China, despite its technological superiority until circa 1600, did not develop a scientific tradition comparable to Europe's—has spawned a rich field of inquiry. The explanations offered are diverse, focusing on socio-political and intellectual structures:

- Needham himself pointed to a centralized Confucian bureaucracy that emphasized hierarchical harmony, lacked a concept of impersonal natural laws (laws were the emperor's, aligned with a cosmic order), and subordinated cognitive inquiry to practical, often prognostic, ends (e.g., astronomy for statecraft).
 - Toby E. Huff (*Intellectual Curiosity*, 2011) highlighted the absence of autonomous, European-style universities as incubators for open debate.
 - Benjamin A. Elman (*On Their Own Terms*, 2005) emphasized the lack of a thoroughgoing mathematization of nature, a crucial step exemplified by Galileo.
- Anecdotally, the "Needham Question" can be inverted: not "why not in China?" but "why in Greece?" The preceding analysis of the Western paradigm suggests an answer coming forth from a specific confluence of historical and cognitive factors.

However, scholars like Geoffrey Lloyd (*The Ambitions of Curiosity*, 2002) and Robert Neville (*Ritual and Deference*, 2008) rightly caution against evaluative hierarchies. They argue that the Chinese model was not inferior but equally valid yet different—a distinct epistemic orientation. François Jullien similarly characterizes Chinese thought as cultivating "contextual virtuosity" rather than abstract, dualistic categorization.

The Operational Level: A "Back to Basics" Approach

Crucially, these comparative analyses typically operate at the level of semantic content—comparing the arguments, worldviews, and storylines produced. The framework developed here, however, allows us to approach the subject from a purely operational side.

Whatever their content—be it a frame for social harmony or a quest for ultimate truth—these grand narratives are brought into being by the same technical-cognitive means: the human capacity to manipulate second-order stimuli (signs, concepts) to provoke and organize displaced experiences into coherent discourses. Operationally, the Aztec narrative demanding heart sacrifice to sustain the sun is technically homologous to the Greek narrative demanding logical deduction to unveil being. The difference is not in the generative mechanism, but in the semantic and evaluative content it produces and the historical actions it licenses.

From this operational vantage point, the Greek "ontic turn"—the quest for the essence of "that which is"—is one culturally specific scenario among many. It is not intrinsically higher; the Chinese relational-cosmic framework is not intrinsically lower. This is a distinction between technique and semantics, between what we are doing (generating narratives) and what we believe we are doing (discovering truth, maintaining harmony).³⁰⁶

The dominance of the Greek miracle/introduction

This operational parity, however, renders the subsequent historical outcome all the more pressing for analysis. One question therefore remains, and it is one of historical causality, not cognitive hierarchy: Why did the Greek template, this particular narrative configuration, acquire the dominant, global influence it now holds? The answer lies not in its superior truth content from an operational perspective, but in the unique confluence of historical circumstances, institutional developments, and perhaps the peculiar instrumental efficacy this narrative afforded in certain domains of "negotiating the Umwelt." Tracing those circumstances is our final task.

The "Greek Miracle" and the Mechanics of Dominance

As established, the Western intellectual program possesses no inherent, operational superiority over other frames of reference. Its perceived primacy is not a verdict of philosophical truth but a product of a multi-dimensional convergence of historical,

³⁰⁶ Reference also to another contribution "*Wandering in stories*".

institutional, and political factors, many of which were contingent, violent, and exclusionary.³⁰⁷

The global dominance of this paradigm can be traced to several intertwined developments:

1. Colonial hegemony:

Beginning in the 16th century, European colonization and imperialism forcibly exported Greco-Roman intellectual frameworks as part of a project of cultural and administrative control. This was accompanied by the systematic destruction and marginalization of local knowledge systems, creating a vacuum filled by Western epistemic models.³⁰⁸

2. Institutional and technological amplification:

The printing press, optimized for alphabetic scripts, enabled the mass reproduction and dissemination of Western texts, standardizing and privileging its conceptual frameworks. Concurrently, the European university model evolved into a powerful engine for universalizing and systematizing these ideas, often actively crowding out alternative knowledge traditions.

3. A specific intellectual trajectory:

Within Europe, a particular intellectual shift—exemplified by Galileo’s mathematization of physics—reinforced the translation of the world into abstract, theoretical constructs. This contrasted with, for instance, the Chinese emphasis on pragmatic skill, craft, and context-specific prediction, which did not prioritize the same form of universal, law-like abstraction.

4. Divergent socio-political drivers:

The political fragmentation of Europe into competing feudal and later nation-states fostered an environment of competition that extended into the intellectual and economic realms, driving innovation and expansion. In contrast, the centralized, bureaucratic empire of China was primarily oriented toward maintaining

³⁰⁷ There is abundant literature on this subject. To name some: *The Colonial Machine* (2012) by W. Storey; *Science and Empire* (2011) a collection of texts edited by B. Bennett & J. Hodge; *The Darker Side of the Renaissance* (1995) by W. Mignolo; K. Pommerantz challenging Eurocentric narratives in *The Great Divergence* (2000); P. Parthasarati discusses Europe’s industrialization in the period of India’s colonization in *Why Europe grew rich and Asia did not* (2001); J. Appleby in turn links the Greek temple to capitalism *The Relentless Revolution* (2010); D. Wootton with *The Invention of Science* (2015).

³⁰⁸ Consider the role of the religious Christian, accompanying the explorers to the America’s and Africa.

cosmological and social harmony, a different and powerful, but non-expansionist, organizing principle.

5. Economic and ideological feedback

The accumulation of capital through colonial exploitation and trade provided both the material resources and an ideological framework (progress, mastery) that fuelled (and was fuelled by) the Western scientific-technical project.

In summary, the global ascendancy of the Greek-derived paradigm is a story of historical accretion and imposition, not of philosophical inevitability. Dominance is not synonymous with superiority. It is the result of a specific, contingent alignment of power, technology, and institutional form that enabled one particular narrative—the "ontic turn" toward a law-governed, objectified nature—to achieve a unique scale of dissemination and application, thereby obscuring its own status as a narrative and recasting itself as simply "reason" itself.

Concluding Reflections:

1. The interplay of biological drives and imposed narratives

The framework presented here posits a biological foundation—a core drive oriented toward sustaining vitality. In humans, this primordial impetus is invariably enveloped and shaped by a narrative, which provides it with a specific, dynamic form. Crucially, while this narrative superstructure preserves the underlying biological drive, it fundamentally *transforms* it into a particular worldview that subsequently guides perception and behaviour. This model does not negate the significant role of genetics, a reality corroborated by research on the behavioural concordance of twins across shared and separate familial environments.

However, the constitutive power of culturally imposed narratives is at least equally significant. This leads to a central, critical consideration: to what extent do we truly apprehend the profound impact exerted by the deliberate imposition of specific narratives upon the young? Whether religious, political, or economic in nature, these frameworks are, in essence, competing narrative formulations.

Do we fully comprehend that through this intentional inculcation, the developing psyche of youth is molded in its entirety? While character may be partially shaped by genetic predispositions, it is, without question, also the definitive product of

education and enculturation. The narrative environment is not merely an additive influence but a formative force that constructs the very lens through which biological imperatives are interpreted and enacted.

2. On the relation of biology and technique

1. From Maslow's hammer to an embodied cognitive interface

The adage commonly known as “Maslow's hammer” — “if the only tool you have is a hammer, it is tempting to treat everything as if it were a nail” — originates in the work of Abraham Kaplan (1964) and Abraham Maslow (1966). While the core observation predates their formulation, it is their popularized version that captures a fundamental cognitive bias: the tendency to interpret and engage with the world through the lens of one's most readily available instrument. This short contribution extends this principle into the domain of evolutionary embodiment, proposing that the primary, most fundamental “tool” for the hominin was the hand itself. Consequently, if the hand is the initial interface with the environment, then the world is interpreted through the affordances and morphological capacities of the hand. The hand is not merely an instrument for satisfying primary biological drives; as the instrument that enables the realization of those drives, it plays a constitutive role in structuring perception itself. In essence, the formal and motor capacities of the hand determine the possible ways in which primary motivations can be fulfilled, thereby shaping the early cognitive organization of the perceptual field.

2. Vaihinger's law and the autonomy of the means

This argument finds a complementary philosophical principle in Hans Vaihinger's “The Philosophy of ‘As If’” and his proposed “Law of the Preponderance of the Means over the End.” Vaihinger posits that means developed for a specific purpose can undergo a developmental trajectory that exceeds their original functional requirements. He writes:

“It is a universal phenomenon of nature that means which serve a purpose often undergo a more complete development than is necessary for the attainment of their purpose. In this case, the means... can emancipate itself partly or wholly and become established as an end in itself.”³⁰⁹

While Vaihinger focused on ideas and thoughts, this logic can be extrapolated to material tools. A sharp stone, initially fashioned to slice carrion, holds latent

³⁰⁹ Originally 1911; translated by C.K. Odgen, 1935, p. xlvi.

potential for other applications—detering predators, cracking nuts, or scraping hides. This aligns with psychologist Richard Gregory’s insight that a tool is not merely a product of intelligence but becomes a source of intelligence, offering new conceptual and operational frameworks (1981, *Mind in Science*). This emancipatory potential of tools—where the means transcends its original ends—illuminates the evolutionary puzzle noted by Alfred Russell Wallace: the emergence of human capacities that far surpass immediate survival needs. The tool, and by primordial extension the hand that creates it, thus becomes a driving force for a self-propelling trajectory of cognitive and technological complexity, as evidenced in the progressive refinement of stone tool technologies from Lomekwi to Oldowan to Acheulean.

3. The decentering spark: from centric embodiment to objectification

This analysis inevitably raises a pivotal question: what provided the initial spark for this self-reinforcing cycle, a drive conspicuously absent in other tool-using species? The argument here suggests that while other animals remain perceptually and functionally embedded within their immediate Umwelt—a state Jakob von Uexküll described as embedded and Helmuth Plessner termed “centric”—the human trajectory was catalyzed by a capacity for *decentering*. This is the ability to achieve detachment, to adopt an “Archimedean” point of view, and to objectify elements of the environment, including one’s own tools. The proposed foundation for this shift is the unique mode of engagement afforded by the hands. The manipulative, distancing, and turning capacities of the hands facilitate a stance of objectification, allowing the environment to be perceived not just as a field of action but as a field of *potential objects* for manipulation and thought. The perspective of decentration is thus inferred from, and made possible by, the specific embodied logic of the human hand.

4. Conclusion: embodied cognition and the logic of the hand

In summary, this synthesis of Maslow’s heuristic and Vaihinger’s law underscores a provocative thesis: the human hand played an exclusive and determining role in forging the distinct human vantage point. Human knowledge and cognition did not emerge *ex nihilo* but are fundamentally grounded in embodied interaction. The capacities of the hands channel and structure cognitive development, initiating a feedback loop whereby tool use fosters objectification, which in turn demands and enables more sophisticated tool use. Therefore, human cognition is grounded in the logic of embodiment, a logic first and foremost written in the form and function of the hand.

5. On a difference in appreciation

The preceding analysis has outlined a developmental trajectory. However, a number of critical theorists extend this argument further, fostering a deeper critique and appreciation of technology's constitutive role. The following overview summarizes some of the most important key positions within this philosophical discourse to equip the reader in forming their own assessment.

Martin Heidegger provides both a characterization and a critique of the systematic application of means, termed *Technik*. In *The Question Concerning Technology* (1954), he argues it is not merely an instrument but, more fundamentally, a mode of "enframing" (*Gestell*) that reduces all that exists—the natural world, other living creatures to a "standing reserve" (*Bestand*), a resource to be ordered and exploited. Consider Marx's view on what has become of labour (a commodity).

His student, Günther Anders, develops this thread, contending that humanity has created tools and systems ("*Das Apparat*") that surpass our moral and perceptual capacities, becoming a primary force to which humans must adapt. Similarly, Jacques Ellul broadens the scope, arguing that "technique" refers not only to tools but to a pervasive logic that subordinates human values to its own internal efficiency.

From the Frankfurt School, Herbert Marcuse acknowledged technology's beneficial potential but critiqued its capitalist application, which produces a "one-dimensional man" enslaved to mass consumption and social control. Jürgen Habermas shares a related concern, warning that the expansion of instrumental rationality into spheres of human communication, labour organization, and personal life is corrosive.

Bernard Stiegler, influenced by Anders and Ellul, introduces a dialectical perspective. He posits that tool-making is a process of "exteriorizing" cognition; these technical extensions open new possibilities that are subsequently "interiorized," shaping thought and even desire. In this view, biological drives become mediated by the technical system, a process central to hominisation itself—a notion prefigured in the 19th century by Ernst Kapp, who saw tools as projections of human organs.

Donna Haraway adopts an optimistic stance to the extreme by welcoming the liberatory potential of the cyborg, a fusion of biological and technological parts.

Synthesizing these perspectives, four broad positions emerge:

1. Technology as a dominant, alienating force:

The primary human motivation is subordinated to the autonomous dynamics of the technological system, which reframes the world as a resource (Heidegger, Anders, Ellul).

2. An ambivalent instrument:

Technology is fundamentally Janus-faced; its application determines its value, serving the community or enabling domination (Marcuse, Habermas).

3. A co-evolutionary circuit:

A feedback loop exists wherein biology drives technological development, which in turn modifies the biological condition and cognitive capacities (Stiegler). Theorists like Bruno Latour reject a biology-technology dichotomy, arguing they constitute a single actor-network where each fulfils complementary functions.

4. Technology as the human niche:

This position shares structural similarities with the first but lacks its pessimism. Here, the technical apparatus constitutes the definitive human ecological niche; evolutionary success depends on navigating these complex systems (Kapp, Haraway).

Final Remarks: Positionality, Method, and Scope

The preceding synthesis necessitates several clarifying remarks regarding its theoretical commitments, methodological underpinnings, and philosophical position.

1. Critique on the "object" and the primacy of operation

A significant strand of contemporary thought, from Alfred North Whitehead's process philosophy to Bruno Latour's actor-network theory and the assemblage theories of Manuel De Landa and Gilles Deleuze, critiques the reification of stable "objects" in favour of understanding reality as dynamic processes, relations, or events. This critique is valuable and is acknowledged. However, it is crucial to note that these frameworks operate within the already-constituted human condition—a condition characterized precisely by the perceptual stability and manipulability of configurations. Their ontological revisions target the semantic interpretation of what is manipulated (process vs. substance), but they do not—and cannot—eliminate the foundational operation of manipulation itself or the sensorimotor logic from which our sense of persistent entities first arose. Our account seeks to explain the genesis of that very condition of stability which later philosophies then problematized.

2. A formulation from within practice

This explanation is not a discourse delivered from an Archimedean point or a "god's-eye view." It is self-consciously composed using the very operations and cognitive implements it describes. It first leverages the technical skill of symbolic manipulation and then the "semantic turn" that allows a condition—the human condition—to become an object of investigation. There is no appeal to mystical faculties or mental clouds. The argument proceeds via operations, pure and simple, applied to configurations constructed in line with the abilities granted by our embodiment, particularly our hands.

3. On the model's format and idealization

The presented model is a synthesis based on decades of engagement with a vast spectrum of literature across the humanities and sciences. From this deep and broad breeding ground, key patterns emerged, distilled here into a simplified, idealized framework. I hypothesize that the conditions and developments referenced did

occur, but almost certainly not in the neat, sequential, and clear-cut manner presented. It is far more likely that processes like "objectification" unfolded over immense timescales, experienced false starts, local extinctions, and independent reinventions across scattered populations that may have numbered only in the tens of thousands. Therefore, while the sources, inferences, and logical connections are sound, the narrative representation is necessarily an idealized model, a heuristic tool for understanding a messy, protracted, and non-linear reality.

4. Concepts as placeholders and the focus on operations

Once we recognize that concepts like "mind," "consciousness," "inner world," and even the "unconscious" are conceptual fabrications—cultural narratives crafted to make sense of certain effects—rather than discoveries of pre-existing metaphysical entities, their mystery dissipates. The focus shifts to the operations that generate these experienced effects. Critics may charge that this approach "solves" problems by bracketing them in advance. Yet, what is the alternative use of these terms other than as placeholders for phenomena felt to be obscure? They are flags marking an area of experience requiring explanation, not the explanation itself. The imperative is to look at what is in plain sight: the public actions and their traceable consequences.

5. A long-form project, distilled

This contribution crystallizes an understanding forged over nearly sixty years of reading, study, doubt, and synthesis. Its concise, discursive form is the product of a rigorous post hoc reduction to essentials. While the initial impetus was personal inquiry, the reliance on the accumulated knowledge of the humanities transformed the project into a contribution to a shared understanding. I have adhered stubbornly to a principle of parsimony, refusing appeals to mysterious forces or to "complexity" as an explanatory end-point, focusing instead on the template of public action and its effects. This approach has proven remarkably fruitful, which, in retrospect, should not be surprising: humans are not magicians. Furthermore, maintaining intellectual independence outside the formal academy allowed this pursuit free from the constraints of academic orthodoxy.

6. On the charge of post-modern relativism

This approach has occasionally been suspected of espousing a postmodern relativism. My response is twofold.

First, from an embodied perspective, closedness and perspectivism are inescapable. We are finite biological beings with specific sensory and motor apparatuses, situated

in time and space. A transcendent, view-from-nowhere objectivity is not an achievable epistemic position but a metaphysical fantasy.

Second, the suspicion itself rests on a tacit, historically inherited conviction: that a "true" depiction of nature as it is in itself is possible, and that the correct method will yield it. This is the epistemological hope instigated by Plato in his pursuit of the essence of "to on" (that which is). The historical and cognitive origins of this specific narrative have been outlined. Its contemporary acceptance often represents an unexamined obedience to a historical residue, not a necessary conclusion of reason. To trace the lineage of our cognitive tools is not to embrace relativism but to practice a deeper, more historically aware form of realism—one that begins with the hand in the world, not the mind apart from it.

7. Recall the initial problem.

The condition of the animal is fundamentally a state of dynamic existence—of being in motion. It is notable that the human, as one species among many, embodies being in the form of "having a world." That is, the human does not coincide entirely with the world; rather, the world appears *to* the human as a phenomenon. This presents a conceptual puzzle: if the human is undeniably an animal, how is it possible for a world to manifest phenomenally in this way? Can this be explained in a manner that avoids appeals to mystery? The aim of the present inquiry has been to offer a reasoned response to this question, drawing upon well-grounded observations and arguments.

Synopsis: The human condition, demystified

In retrospect, the insights gathered here appear almost trivial. Trivial, in the sense that they invoke no supernatural mysteries or ineffable complexities. The effect—being human—is peculiar, but the process of its realization is neither problematic nor particularly complicated.

Let us recapitulate the logic, step by step:

1. Biological foundation:

Humans are animals. Biologically, and at the most basic behavioural level, they are not different in principle from other animals, particularly their closest kin.

2. Motivated negotiation:

Like all life, they are driven by primary motives to negotiate the impositions and opportunities of their environment.

3. A particular divergence:

The human negotiates in a particular way (recall R. Leakey's observation that humans "do things differently").

4. The core innovation:

This particularity consists in perceiving—that is, in organizing sensory input—such that the world is apprehended as a field of manipulable units (proto-objects).

5. From manipulation to meaning:

Through associative learning, these units can activate consolidated neural configurations, which in turn realize meaningful content in experience.

6. A unified logic:

In essence, the entire edifice amounts to the manipulation of this specific type of unit.

7. The reflexive turn:

The peculiar, self-referential effect—though not the operation itself—is that some of these units activate configurations related to the human agent itself. Thus, the agent simultaneously becomes the object of manipulation and the agent who manipulates.

8. The definition:

In short, to realize the human condition is to experience the effect of manipulating implements that function as stimuli provoking content in experience—content that can, reflexively, refer to the agent itself.

The operation and its experiential effect are not separate; they collapse into a single movement. And because the operation intrinsically incorporates "aboutness" or reference, it generates the very experience that Sartre termed "cette distance nulle"—that null distance of non-coincidence with oneself which is the structure of

consciousness. The mystery of the mind is the palpable effect of a hand shaping the world and, in that very gesture, shaping itself.